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ABSTRACT

An interim study was conducted in Kentucky to determine the effectiveness of Competency Based Vocational Education (CBVE) and to compare its effectiveness to that of traditional teaching methodologies. Research surveys of those directly involved in the implementation of CBVE were used to ascertain if CBVE is meeting its self-stated goals. Approximately twenty-five percent of all high school and postsecondary educators and students (forty-five administrators, fifty-five teachers, and 745 students) participating in CBVE in Kentucky were questioned. Five aspects of the program were evaluated: instructional planning, student impact, instructional management, professional development, and programmatic aspects. To compare the effectiveness of CBVE and traditional methodologies, a cognitive skill test and classroom summary report (which incorporated a performance skill test) were administered to eleven classes in the areas of bank teller, secretary, and tractor mechanics. Based on the test scores and questionnaire responses, the following conclusions were reached: (1) CBVE was meeting the career needs of students, (2) CBVE students were progressing faster than students taught by traditional methods and learned a larger amount of subject matter, and (3) CBVE was inexpensive to implement in the schools' present facilities. Because these conclusions resulted from an interim, and therefore limited, study, they should be viewed within that context. (ELG)

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FINAL REPORT

Interim Period 1

CBVE: A STUDY TO MEASURE ITS EFFECTIVENESS IN KENTUCKY

U S DEPARTMENT OF HEALTH.
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CHAPTER I

INTRODUCTION

If vocational education is to continue to respond to the demands for accountability placed upon it by educators, legislators, and the public in general, it must know if it is accomplishing its goals. Competency Based Vocational Education is one attempt to improve vocational education. As such, it must be examined for its effectiveness. The study reported herein attempts to provide necessary data which will assist decision makers in making accurate decisions regarding the future of Competency Based Vocational Education.

Need for the Study

Because Competency Based Vocational Education (CBVE) is relatively new, its effectiveness has been largely untested. Studies have been conducted to develop materials and curricula, but few studies have actually been conducted with the main purpose of comparing the effectiveness of the CBVE methodology to that of traditional teaching methodologies. There was a need to know if CBVE was in fact more effective than traditional teaching methodologies and to know if the CBVE program in Kentucky was meeting its self-established objectives.

General Objective

To provide the Kentucky Bureau of Vocational Education a data base from which decisions governing the future of statewide CBVE implementation may be made.

Specific Objectives

(1) To describe/analyze the level of progress CBVE has attained in meeting its programmatic objectives by developing and employing appropriate instrumentation (teacher surveys, student surveys, and administrator surveys) to analyze and describe CBVE's level of progress.

(2) To measure the effects of various levels of CBVE implementation relative to:
  a) the level of student skill achievement
  b) the level of student cognitive achievement
  c) the level of teaching effectiveness

(3) To develop and employ a monitoring system to record such student data as:
  a) grade for each reporting period
  b) attendance figures
  c) rate of module completion
  d) evaluation
  e) time requirements
  f) maximum/minimum class enrollments

Null Hypotheses

The following null hypotheses were generated. (The level of probability necessary to justify the rejection of any testable hypothesis considered in this study is .05.)

1) There is no significant difference between the Cognitive Skill Test scores of students taught by CBVE and the Cognitive Skill Test scores of students taught by traditional methods in the occupational areas of Tractor Mechanics, Bank Teller, and Secretary.

2) There is no significant difference between the Performance Skill Test scores of students taught by CBVE and the Performance Skill Test scores of students taught by traditional methods in the occupational areas of Tractor Mechanics, Bank Teller, and Secretary.

3) There is no significant difference between the numbers of days required by students to complete each CBVE module and the number of days required to complete traditional instruction of similar classroom material in the occupational areas of Tractor Mechanics, Bank Teller, and Secretary.

4) There is no significant difference between the attitude ratings, effort ratings, or grade points assigned to students by their teachers under CBVE and the attitude, effort, or grades of students learning under traditional methods of instruction in the occupational areas of Tractor Mechanics, Bank Teller, and Secretary.

5) There is no significant difference between the classroom attendance record of students when using CBVE modules and the classroom attendance record of students taught by traditional methods in the occupational areas of Tractor Mechanics, Bank Teller, and Secretary.

Limitations of the Study

A point of caution should be exercised; as this report is written, CBVE is relatively new and not yet fully implemented. Most participants' exposure time to the competency based approach is one year or less. Because of this limited exposure, teachers, administrators, and students may not be fully operationalized to the CBVE approach. Although this caution cannot be empirically justified, it is a consideration the reader should keep in mind while reviewing the study.

Definition of Terms

(1) CST - Cognitive Skill Test; a project-designed paper and pencil test to assess knowledge of each occupational area studied

(2) PST - Performance Skill Test; a project-incorporated test designed to assess performance skills required of students studying a specific occupational area

(3) SMS - Student Monitoring System; a computer-based system that tracks student progress through each occupational area studied

(4) SET - Student Evaluation of Teaching; an instrument developed by Veldman and Peck; utilizes ratings from students to measure the following five dimensions of teaching behavior:
  a) friendly and cheerful
  b) knowledgeable and poised
  c) lively and interesting
  d) control
  e) non-directive

(5) Administrator Questionnaire - project-developed instrument to assess various dimensions of administrator perceptions toward CBVE

(6) Teacher Questionnaire - project-developed instrument to assess various dimensions of teacher perceptions toward CBVE

(7) Student Questionnaire - project-developed instrument to assess various dimensions of student perceptions toward CBVE

(8) CSR - Classroom Summary Report; a teacher-completed form essential to data gathering for the student monitoring system

CHAPTER II

METHODS AND PROCEDURES

Introduction

The project was composed of two components. One component was designed to answer questions relating to various programmatic aspects of Competency Based Vocational Education. This was accomplished through survey research. The second component took the form of quasi-experimental research and was used to gather data about the effectiveness or non-effectiveness of the CBVE teaching approach as compared to a traditional teaching approach.

The methods and procedures of each component will be discussed individually.

Survey Research Component

Identification of Population

The sample population consisted of 45 vocational administrators, 55 vocational teachers (both high school and post secondary), and 745 high school and post-secondary students. The identity of the population from which to choose the sample resulted from several meetings with the Bureau of Vocational Education staff in Frankfort, Kentucky. The sample selection was accomplished via computer generated random numbers and comprised 25 percent of the entire target population of educators and students using CBVE in the state of Kentucky.

Individual identities were coded and then disregarded, thus assuring anonymity. As a result, vocational education regions are identifiable, but individuals within the regions are not.

Instrument Development

In an attempt to ascertain whether Competency Based Vocational Education is meeting its self-stated goals, reactions were sought from those directly involved in the implementation of CBVE. In an effort to determine the prevailing attitude toward CBVE, teacher, student, and administrator questionnaires were developed. (A copy of each instrument may be found in Appendices A through C.)

The statewide CBVE program was assessed in terms of five dimensions developed to appraise various aspects of the program. These dimensions are defined as follows:

1) Instructional Planning (IP) - The IP subscale was designed to appraise the perceived adequacy of CBVE to provide instructional resource materials, compatible teaching methodology, and grading systems to Kentucky's vocational schools. Questionnaire items included on the IP scale are: from the teacher questionnaire--statements 20, 21, 22, 23, 24, and 25; from the administrator questionnaire--statements 7, 14, 15, and 18; and from the student questionnaire--statements 1, 2, 11, 19, 22, 27, 33, 37, 41, and 42.

2) Student Impact (SI) - This subscale provides a measure of the perceived effect of CBVE in students' enthusiasm toward and satisfaction with the curriculum, the learning process, and vocational education in general. Items comprising the SI scale are: for teachers--statements 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, and 41; for administrators--statements 5, 9, 24, 26, and 27; and for students--statements 3, 6, 12, 15, 24, 25, 29, 30, 32, 35, 36, and 45.

3) Instructional Management (IM) - The IM subscale assesses the perceived impact of CBVE on day-to-day classroom management and the student-teacher interaction. Items incorporated into the IM scale are: for teachers--statements 5, 6, 7, and 8; for administrators--statements 22, 23, and 11; and for students--statements 5, 16, 9, 23, 28, 38, and 46.

4) Professional Development (PD) - This subscale measures the perceived ability of CBVE to supplement or facilitate teacher effectiveness in the classroom and/or to meet students' individual career needs. The PD scale is composed of the following items: for the teacher's questionnaire--numbers 11, 14, 9, 10, 12, and 13; for administrators--numbers 16, 19, and 17; and for students--numbers 7, 14, 17, 39, and 44.

5) Programmatic Aspects (PA) - This subscale provides an indicator of the teachers' perception of the ease of implementing, continuing, and supporting CBVE programs as well as students' regard for the modular approach to learning. The PA scale includes items 3, 4, 6, 8, 10, and 21 on the administrator's questionnaire; items 20 and 8 on the student survey, and items 15, 16, 17, 18, and 19 on the teacher questionnaire.

All instruments were subjected to content validity checks, with the student questionnaire undergoing additional tests of reliability. Reliability tests on the teacher and administrator instruments were not conducted due to time and budgetary constraints. The more rigorous tests of extensive validation and reliability characteristic of standardized measurement and data collection devices were not performed on the questionnaires due to constraints previously mentioned.

Student Evaluation of Teaching

Supplementary to the student survey, perceptions of teaching behavior were obtained utilizing the Student Evaluation of Teaching I (SET). The SET is a ten item instrument which allows students to rate teachers on five dimensions of teaching behavior:

1. Friendly and cheerful
2. Knowledgeable and poised
3. Lively and interesting
4. Firm control (discipline)
5. Non-directive (democratic procedure)

In addition to the five dimensions, a total rating is also obtained. Each dimension is scored within the range of 100 to 400, with the higher value representing a more favorable estimation of teaching behavior. Preliminary investigations by Adams (1) suggest that SET ratings by students may provide correlations with teacher ratings obtained from teacher supervisors and peers, as well as ratings from direct classroom observation systems.

Due to limited administration time within each classroom, SET items, normally administered separately, were incorporated among those of the student survey. Although no estimation of validity may be obtained from this procedure, it was proposed that the inclusion of SET data may (1) indicate sources of variation between classrooms of differing occupational areas, and (2) enhance data obtained from the subscales of the student survey.

Instrument Dissemination

Once the sample was selected, a meeting between research staff and the CBVE Steering Committee was held. It was determined that Regional Contact Persons, because of their familiarity with the school personnel, could best distribute the individual classroom and school questionnaires.

Fourteen Regional Contact Persons were contacted, and complete sets of addressed questionnaires were hand delivered to each contact person in every vocational education region of Kentucky.

This method of dissemination proved to be most effective as approximately 90 percent of all questionnaires were returned. This will be discussed further in Chapter III.

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[1] R. D. Adams and J. T. Sandefur, "An Evaluation of Teaching: An Interim Research Report," Journal of Teacher Education, XXVII (Spring, 1976).

Quasi-Experimental Component

Research Design

This component was based on a classical pretest-posttest experimental design. The pretesting was necessary as complete randomization could not be assured. Figure 1 illustrates this design.

(1)	(2)	(3)	(4)
S	T_1	X_1	T_2
S	T_1	X_2	T_2

Figure 1

The symbols used are as follows:

S = Selection of sample

T_1 = Pretest

X_1 = Treatment type 1

X_2 = Treatment type 2

T_2 = Posttest

Twelve Kentucky vocational education teachers were subjectively selected based on information supplied by the CBVE Steering Committee. Teachers were chosen on the basis of experience with CBVE, occupational areas taught, vocational region in which the teacher taught, and willingness to participate.

Three occupational areas consisting of Bank Teller, Secretary, and Tractor Mechanics were represented by the twelve teachers. Each occupational area was taught by four teachers.

A more complex design was extended from the pretest-posttest design. Figure 2 illustrates this design in its entirety. This design allowed comparisons within groups as well as between groups. For example, Bank Teller (BT) teacher "1" taught a given set of modules or objectives. During instructional period one (IP1), the first half of the modules were taught using CBVE, and during instructional period two (IP2), the remaining modules were taught using traditional methodology. BT teacher "2" taught the same set of modules but in reverse teaching methodology sequence to BT teacher "1." Group scores from the CST and PST were then examined between the two groups. The following chapter discusses the results of these types of comparisons.

Class	Pre-Measurement	Sequence of Treatment		Post-Measurement	N Size
BT_1	CST	X_1	X_2	CST,PST	7
BT_2	CST	X_2	X_1	CST,PST	11
BT_3	CST	X_1	X_2	CST,PST	13
BT_4	CST	X_2	X_1	CST,PST	15
S_1	CST	X_1	X_2	CST,PST	23
S_2	CST	X_2	X_1	CST,PST	20
S_3	CST	X_1	X_2	CST,PST	14
S_4	CST	X_2	X_1	CST,PST	29
TM_1	CST	X_1	X_2	CST,PST	16
TM_2	CST	X_2	X_1	CST,PST	11
TM_3	CST	X_1	X_2	CST,PST	20
TM_4	CST	X_2	X_1	CST,PST	15

where: BT = Bank Teller
S = Secretary
TM = Tractor Mechanics
X_1 = CBVE Instructional Approach
X_2 = Traditional Instruction Approach
CST = Cognitive Skill Test
PST = Performance Skill Test

Figure 2

Instrumentation Development

The Cognitive Skill Test (CST) was developed to assess the cognitive domain, while the Performance Skill Test (PST) was developed to assess the applied skills of the subjects. In order to gain a more accurate observation of the learning situation, a tracking system was designed to measure variables of student effort, attitude toward learning, length of trial attempts, completion rates, and dates of initiation and completion. These variables were subjectively reported by the classroom teacher through the use of the Classroom Summary Report (CSR). These data collectively formed the basis for the total Student Monitoring System.

Cognitive Skill Tests

Cognitive Skill Tests (CST's) were developed for each of the occupational areas in the experimental design. The CST items were selected from the instruction sheets, student self-checks, instructor's final checklists, check-out activities, and objectives as outlined in the individual instructional modules of each vocational area. The instruments were further revised based on objectives found in the CBVE/V-TECS catalogue of objectives. Due to time and budget limitations, field testing and reliability checks were not performed. However, instructors who were to receive the CST's were shown the tests in advance and commented favorably on the representativeness of the item pool. The CST pretests consisting of the total item pool for each subject area may be found in Appendix D.

The pretest consists of the total item pool generated for an individual subject area (those items which are incorporated in the mid-test and posttest). The mid-test is comprised of items drawn from those modules taught during Instructional Period 1 (IP1) while post-test items were derived from those modules taught during Instructional Period 2 (IP2).

Performance Skill Tests (PST)

In an attempt to measure the applied skills resulting from the two methods of instruction, PST's for each occupational area were developed. The PST is composed of final check-out activities found in the respective CBVE module. As the learning objectives were the same for each teaching methodology, the check-out activities were reworded, and condensed into a precise, practical format. The PST was employed on a posttest basis only. The rationale for this was twofold: a) pragmatic limitations, i.e., time requirements for teachers and students; and b) the CST could serve as a pretest in determining equality of grouping. An example of a PST may be found in Appendix E.

Student Monitoring System (SMS)

The purpose of the SMS was to obtain and record data that could not otherwise be obtained through the CST or the PST. The system monitored the student's rate of completion, attitude and effort, evaluation, and attendance. The SMS utilized a Classroom Summary Report (CSR) which was completed by the teacher. A CSR was completed for each student after the student completed a module. The CSR data were then returned and the data keypunched for computer analysis which compiled student progress. A copy of the CSR may be found in Appendix F.

Instrument Dissemination and Retrieval

All instruments and data collecting tools were hand disseminated to the twelve participating teachers. During dissemination, additional orientation information was shared, and questions from teachers were answered. Teachers agreed to return the completed materials by May 30, 1977. One teacher failed to participate due to a lack of CBVE module materials; one failed to complete the CSR's; one completed only half the project due to illness; all others returned complete data.

CHAPTER III

ANALYSIS OF DATA AND PRESENTATION OF FINDINGS

Introduction

The study contained two unique research components. Each component is presented separately to assist the reader in understanding the reported findings.

Survey Research Component

The sample for the survey was obtained via computer generated random numbers and consisted of 25 percent of each occupational area using CBVE instructional methodology. Forty-nine administrator surveys were hand disseminated via regional contact persons, and 43 were returned yielding an 88 percent return rate for this group. Fifty-nine teacher surveys were hand disseminated via regional contact persons, and 55 were returned yielding a 93 percent return rate. As individual class size varied, it was impractical to compute the exact number of student surveys to deliver, therefore, an estimate of 20 surveys per teacher was disseminated. The total number of classes responding is the same as the number of teachers, 93 percent (N = 745 students).

The survey research was based upon three project developed attitudinal surveys. The teacher, administrator, and student surveys were designed to measure attitudes toward five dimensions of CBVE across each of the three surveyed groups.

Table 1 presents the total groups' mean responses to the five dimensions discussed in Chapter II. The mean for each group of respondents, for each dimension, was computed by assigning the following values to the Likert scale: [2] Strongly Agree = 1, Agree = 2, Disagree = 3, and Strongly Disagree = 4[2].

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[2] Although the scores are, strictly speaking, ordinal data, they have been treated as continuous data since it is assumed that the dimension could be measured more finely than in integral score units. In his book, Methods of Educational Research, Max D. Englehart makes a sound supporting argument for similarly treating data (p. 197).

TABLE 1

TOTAL GROUP $\overline{X}$ RESPONSE COMPARISONS BY DIMENSION

Dimensions	Students[a]	Teachers[b]	Administrators[c]
Student Impact (SI)	2.32	2.17	2.06
Professional Development (PD)	2.20	1.94	1.88
Programmatic Aspects (PA)	2.52	1.91	2.12
Instructional Management (IM)	2.02	2.10	2.12
Instructional Planning (IP)	2.16	2.35	2.25

[a]N = 745, [b]N = 55, [c]N = 43

This procedure allows for the comparison among teachers, administrators, and students' perceptions of each sub-scale dimension. It appears that administrators have the most favorable attitude toward CBVE's amount of impact upon students. Teachers see CBVE as having less student impact, while the students' attitudes toward this dimension are the least favorable compared to teachers and administrators. It should be noted, however, that all three group attitudes are favorable toward CBVE's general impact upon students as no group mean within the student impact dimension is greater than 2.50.

Each group viewed CBVE's impact upon Professional Development as favorable. Administrators showed the most favorable attitude toward the Professional Development dimension followed by teachers and then students.

Teachers viewed Programmatic Aspects of CBVE more favorably than did administrators or students.

Students' attitudes toward the Instructional Management of CBVE was more favorable than the teachers' or the administrators' attitudes. Student attitudes toward CBVE Instructional Planning was again more favorable than administrators and teachers.

It is interesting to note that the students' most favorable attitudes were toward Instructional Management ($\overline{X}$ = 2.02) and least favorable attitudes were toward Programmatic Aspects ($\overline{X}$ = 2.52), while the teachers viewed Programmatic Aspects as most favorable ($\overline{X}$ = 1.91) and Instructional Planning as least favorable ($\overline{X}$ = 2.35), and the administrators viewed Professional Development most favorable ($\overline{X}$ = 1.88) and Instructional Planning least favorable ($\overline{X}$ = 2.25). Table 2 illustrates these comparisons.

TABLE 2

MOST AND LEAST FAVORABLE SURVEY DIMENSION BY GROUP

Group	Most Favorable	Least Favorable
Students	I.M.[a] $\overline{X}$=2.02	P.A. $\overline{X}$=2.52
Teachers	P.A.[b] $\overline{X}$=1.91	I.P.[d] $\overline{X}$=2.35
Administrators	P.D.[c] $\overline{X}$=1.88	I.P. $\overline{X}$=2.25

[a] I.M. - Instructional Management
[b] P.A. - Programmatic Aspects
[c] P.D. - Professional Development
[d] I.P. - Instructional Planning

Table 3 illustrates the attitudes of occupational areas within each group toward the five survey dimensions of CBVE.

TABLE 3

GROUP $\overline{X}$ RESPONSE COMPARISONS BY DIMENSION BY OCCUPATIONAL AREA [a]

Tractor Mechanics

Dimensions	Students	Teachers
Student Impact (SI)	2.19	1.56
Professional Development (PD)	2.18	2.08
Programmatic Aspects (PA)	2.62	1.40
Instructional Management (IM)	1.95	2.38
Instructional Planning (IP)	2.08	2.42
N-Size	25	2

TABLE 3 - Continued

Secretarial Dimensions	Students	Teachers
Student Impact (SI)	2.21	2.06
Professional Development (PD)	2.06	1.87
Programmatic Aspects (PA)	2.56	1.76
Instructional Management (IM)	1.84	1.85
Instructional Planning (IP)	2.16	2.27
N-Size	54	5
Bank Teller		
Student Impact (SI)	1.73	2.53
Professional Development (PD)	1.67	2.08
Programmatic Aspects (PA)	1.71	2.50
Instructional Management (IM)	1.66	1.88
Instructional Planning (IP)	1.71	2.83
N-Size	17	2
Dental Assistant		
Student Impact (SI)	2.21	2.69
Professional Development (PD)	2.11	2.33
Programmatic Aspects (PA)	2.30	2.80
Instructional Management (IM)	2.20	2.50
Instructional Planning (IP)	2.03	3.00
N-Size	15	1

TABLE 3 - Continued

Food Preparation Dimensions	Students	Teachers
Student Impact (SI)	2.16	2.10
Professional Development (PD)	2.15	1.98
Programmatic Aspects (PA)	2.47	1.82
Instructional Management (IM)	1.98	2.25
Instructional Planning (IP)	2.11	2.30
N-Size	127	10
Child Care Worker		
Student Impact (SI)	2.44	2.23
Professional Development (PD)	2.23	1.81
Programmatic Aspects (PA)	2.58	1.77
Instructional Management (IM)	2.08	2.08
Instructional Planning (IP)	2.20	2.19
N-Size	84	6
Auto Body		
Student Impact (SI)	2.63	2.33
Professional Development (PD)	2.60	1.97
Programmatic Aspects (PA)	2.81	1.72
Instructional Management (IM)	2.21	2.45
Instructional Planning (IP)	2.33	2.40
N-Size	56	5

TABLE 3 - Continued

Carpentry Dimensions	Students	Teachers
Student Impact (SI)	2.35	2.13
Professional Development (PD)	2.16	1.85
Programmatic Aspects (PA)	2.49	1.86
Instructional Management (IM)	2.01	1.91
Instructional Planning (IP)	2.16	2.24
N-Size	174	11
Machine Shop		
Student Impact (SI)	2.48	2.58
Professional Development (PD)	2.34	2.21
Programmatic Aspects (PA)	2.67	2.57
Instructional Management (IM)	2.10	2.36
Instructional Planning (IP)	2.22	2.71
N-Size	117	7
Cashier Checker		
Student Impact (SI)	2.26	1.85
Professional Development (PD)	2.09	1.73
Programmatic Aspects (PA)	2.38	1.60
Instructional Management (IM)	1.99	1.75
Instructional Planning (IP)	2.16	2.07
N-Size	59	5

[a] Administrators are not presented.as the administrators were not directly associated with only one occupational area.

The attitudinal surveys are presented in Tables 4, 5, and 6. Frequency counts percentages have been adjusted to account for missing data.

The data reflect a high concensus of favorable response among students with regard to the instructional components of CBVE modules. For example, as shown in Table 4, 84 percent of the students reported that the self-check sections of the modules were of value to them, 72 percent felt that the learning activities were easy to follow, 83 percent felt that the modules provided factual information, and 80 percent reported that the illustrations in the modules were helpful. In addition, 78.6 percent of the students felt that the overall reading level of the modules was not difficult. Similarly, 82 percent of the teachers surveyed felt that the reading level of modules was equal to their students' abilities, and 89 percent reported that their students progressed from module to module without difficulty (Table 5). This finding is particularly interesting in that some CBVE innovators have expressed concern about the reading level found in the modules.

All groups indicated the learning objectives to be accurate and necessary information when seeking employment in the respective occupational areas (Table 4 - item 38, Table 5 - item 9, and Table 6 - item 25).

Overall, the results of the three surveys presented in Tables 4, 5, and 6 give very strong support for the CBVE program as it has been implemented. Students (Table 4) responded very favorably to statements concerning materials, teacher techniques and attitudes, and the general use of CBVE. In view of the many favorable responses to the majority of the statements, it is interesting to note that students also indicated they did not want modules used in other classes (Statement 20), that classes are not more enjoyable when CBVE is used (Statement 24), and that CBVE modules were somewhat boring (Statement 25). Teachers participating in the CBVE program also responded favorably to most of the statements appearing on their questionnaire (Table 5). However, the teachers indicated they did not believe their students were any better motivated by CBVE (Statement 22), that CBVE did not reduce attrition (Statement 25), that CBVE did not increase enrollment (Statement 28), and that student interest in the class did not increase (Statement 33). Finally, administrators (Table 6) also gave very favorable reactions to CBVE, as it was implemented in their schools. Indications were given that CBVE could not accommodate 10 percent more students (Statement 4) and, as also indicated by the teachers, it did not reduce attrition (Statement 7).

As indicated previously, a vast majority of statements on all three questionnaires received responses favorable to the concept of CBVE (greater than 50 percent of sample answering in favorable direction on a given item). Of those surveyed, 60 to 70 percent of the student sample, 70 to 80 percent of the teachers, and 80 to 90 percent of the administrators responded favorably to CBVE as an instructional method.

TABLE 4

TOTAL STUDENT QUESTIONNAIRE ADJUSTED PERCENT RESPONSE

	Item	% SA	% A	% D	% SD	% SA+A	% D+SD
1.	The learning activities instructions are clear and to the point.	16.9	67.1	14.4	1.6	84.0	16.0
2.	The student self-checks are very valuable.	23.9	60.3	13.5	2.3	84.2	15.8
3.	I feel confused by the instruction sheets within the modules.	7.4	21.8	58.5	12.3	29.2	70.8
*4.	My teacher is always friendly toward students.	43.3	41.0	11.9	3.8	84.3	15.7
5.	Completing CBVE modules is a good use of my time.	15.2	51.3	24.7	8.8	66.5	33.5
6.	The modules help me to solve problems.	12.6	54.0	29.6	3.9	66.6	32.9
7.	I can apply very little of what is in the modules to practical situations.	4.8	34.1	44.6	16.4	38.9	61.0
8.	CBVE instruction does not seem to be any better than the kind of instruction we had before.	9.5	29.8	47.9	12.8	39.3	60.7
9.	I have difficulty reading the material in the modules.	4.0	17.4	61.9	16.7	21.4	78.6
*10.	My teacher knows a lot about the subject.	47.8	44.2	5.3	2.7	92.0	8.0
11.	The instructor's final checklist helps me know what performance my teacher expects of me.	24.2	63.2	11.1	1.6	87.4	12.7
12.	While working on the modules, I feel isolated and all alone.	8.0	25.2	50.4	16.4	33.2	66.8

TABLE 4 - Continued

Item	% SA	% A	% D	% SD	% SA+A	% D+SD
*13. My teacher is never dull or boring.	26.7	37.8	24.8	10.7	64.5	35.5
14. Using CBVE modules has increased my ability to think on my own.	13.8	55.1	25.0	6.1	68.9	31.1
15. I think CBVE is a big joke.	10.2	9.2	50.1	30.5	19.4	80.6
16. I have enough time to learn the materials that are in the modules.	14.7	55.7	23.1	6.5	70.4	29.6
17. CBVE is a poor way to learn skills.	7.9	15.5	52.1	24.5	23.4	76.6
*18. My teacher expects a lot from students.	14.1	45.9	35.5	4.5	60.0	40.0
19. I would like my teacher to teach the way she/he did before CBVE.	18.2	29.4	41.5	10.8	47.6	52.3
20. I think my other classes should also use modules.	10.1	27.1	35.9	26.8	37.2	62.7
*21. My teacher asks for students' opinions before making decisions.	10.1	55.9	27.6	6.4	66.0	34.0
22. I don't really understand what CBVE is all about.	6.9	24.6	58.5	10.0	31.5	68.5
23. When we use CBVE, my teacher has more time to work with us individually.	13.6	49.3	27.7	9.4	62.9	37.1
24. I enjoy class more when we use CBVE.	11.4	33.7	37.9	17.0	45.1	54.9
25. I am often bored when I use CBVE modules.	20.0	34.6	36.1	9.2	54.6	45.3

TABLE 4 - Continued

	Item	% SA	% A	% D	% SD	% SA+A	% D+SD
*26.	My teacher is usually cheerful and optimistic.	26.1	58.2	12.4	3.4	84.3	15.8
27.	The slide-tape presentations add very little to CBVE instructions.	5.1	26.3	50.3	18.3	31.4	68.6
28.	My teacher never has enough time to answer my questions about the material in the modules.	2.6	9.0	58.0	30.5	11.6	88.5
29.	I am not sure how much I have learned after I complete a module.	9.9	38.0	44.8	7.3	47.9	52.1
30.	The introduction makes me want to learn more about the tasks in the modules.	9.5	44.9	36.6	9.0	54.4	45.6
*31.	My teacher is not confused by unexpected questions.	17.3	60.6	18.3	3.8	77.9	22.1
32.	I seem to learn faster when I use CBVE modules.	10.2	38.0	41.1	10.7	48.2	41.8
33.	It is hard for me to follow the learning activities instructions.	5.1	22.7	61.6	10.6	27.8	72.2
34.	I want to do my best while I am working on a module.	29.1	59.9	8.4	2.6	89.0	11.0
*35.	My teacher makes learning more like fun than work.	15.6	47.1	27.9	9.4	62.7	37.3
36.	I feel at ease when I am working with CBVE modules.	11.0	48.6	32.9	7.5	59.6	40.4
37.	The drawings and illustrations help me to understand the modules better.	18.8	62.5	15.4	3.4	81.3	18.8

TABLE 4 - Continued

Item	% SA	% A	% D	% SD	% SA+A	% D+SD
38. The modules give me facts instead of just nice-to-know information.	20.0	63.5	13.9	2.7	83.5	16.6
39. After completing CBVE, I will feel qualified to get a job.	13.7	46.3	31.5	8.5	60.0	40.0
*40. My teacher doesn't let students get away with anything.	17.1	42.6	32.0	8.3	59.7	40.3
41. The CBVE modules do not teach me enough.	9.2	27.2	51.0	12.7	36.4	63.7
42. The module instruction sheets are easy to follow.	13.9	63.6	19.4	3.2	77.5	22.6
*43. My teacher often gives students a choice in assignments.	9.7	48.2	32.4	9.8	57.9	42.2
44. I don't learn much from the student self-checks because the answers are given.	7.4	20.6	56.0	16.0	28.0	72.0
45. CBVE modules seem to fit my style of learning.	11.6	40.5	31.8	16.1	52.1	47.9
46. My teacher does not seem to care whether I am learning or not.	3.8	4.4	35.4	56.5	8.2	91.9

*Imbedded SET items   N = 745

TABLE 5

TOTAL TEACHER QUESTIONNAIRE ADJUSTED PERCENT RESPONSE

Item	% SA	% A	% D	% SD	% SA+A	% D+SD
1. Transition from module to module is difficult for students.		10.9	61.8	27.3	10.9	89.1
2. Classroom management is difficult when students are using modules.	3.6	20.0	65.5	10.9	23.6	76.4
3. I have had no major problems assigning grades to my CBVE students.	5.5 5.5	59.2 59.2	27.3 27.3	9.0 9.0	63.7 63.7	36.3 36.3
4. CBVE allows my students to do more "independent investigations" than my previous method of instruction.	23.6	54.5	20.0	1.9	78.1	21.9
5. I feel uncomfortable using the CBVE materials.	1.9	11.1	51.9	35.1	13.0	87.0
6. CBVE restricts my freedom in the classroom.		16.4	52.7	30.9	16.4	83.6
7. CBVE allows me to keep up to date in my occupational area.	9.1	63.6	18.2	9.1	72.7	27.3
8. I am unable to diagnose learning difficulties using the CBVE modules.		5.5	72.7	21.8	5.5	94.5
9. CBVE's objectives are "not in tune" with their respective occupational areas.	1.9	7.4	61.1	29.6	9.3	90.7
10. CBVE improves overall teacher effectiveness.	10.9	65.5	21.8	1.8	76.4	23.6
11. CBVE reference and resource materials are available to me.	31.5	63.0	5.5		94.5	5.5
12. Administrative support for CBVE is strong.	26.9	63.5	7.7	1.9	90.4	9.6

TABLE 5 - Continued

Item	% SA	% A	% D	% SD	% SA+A	% D+SD
13. CBVE is a fad and will be replaced by another system within the next few years.	3.8	17.3	57.7	21.2	21.1	78.9
14. The teachers inservice workshop, which introduces CBVE, does an adequate job.	9.4	71.7	7.5	11.4	81.1	18.9
15. CBVE modules fit into our typical school year.	13.0	70.4	11.1	5.5	83.4	16.6
16. The number of slide tape machines provided is adequate for my students' needs.	16.7	50.0	18.5	14.8	66.7	33.3
17. I often refer to the Instructor's Manual for resource materials and ideas.	9.1	72.7	16.4	1.8	81.8	18.2
18. Using CBVE modules requires more organizational time than do other methods of instruction.	21.8	38.2	36.4	3.6	60.0	40.0
19. There is no major difference in CBVE teaching methodology and the teaching methodology I used before I implemented CBVE.	7.7	30.8	44.2	17.3	38.5	61.5
20. CBVE evaluation is difficult to translate into traditional grading systems.	14.8	31.5	46.3	7.4	46.3	53.7
21. The organization of the Instructor's Manual needs to be simplified.	5.5	28.6	65.5	5.4	29.1	70.9
22. Students are better motivated by the CBVE modules than with my previous instructional methods.	3.7	40.7	50.0	5.6	44.4	55.6
23. Students seem more "task oriented" using CBVE modules.	5.6	70.4	20.4	3.6	76.0	24.0

TABLE 5 - Continued

Item	% SA	% A	% D	% SD	% SA+A	% D+SD
24. The reading level of the modules is too difficult for my students' abilities.		17.0	73.6	9.4	17.0	83.0
25. The introduction of the CBVE module concept has kept students in school who may have dropped out of a traditional program.		31.3	52.0	16.7	31.3	68.7
26. Most students dislike the CBVE approach.	5.5	20.0	63.6	10.9	25.5	74.5
27. Facilities at my school are appropriate for CBVE instruction.	14.5	54.5	20.1	10.9	69.0	31.0
28. CBVE has increased student enrollment in our vocational education program.		9.3	83.7	7.0	9.3	80.7
29. I do not like to teach under a Competency Based Vocational Education System.		3.8	59.6	36.6	3.8	96.2
30. Teaching techniques can be more creative with CBVE materials.	5.7	64.2	26.4	3.8	69.8	30.2
31. My audio visual equipment frequently breaks down.	1.9	13.5	67.3	17.3	15.4	84.6
32. The students like the module presentation better than the traditional forms of presenting material.	11.5	50.0	36.5	2.0	61.5	38.5
33. More students than ever before have expressed interest in taking my class since CBVE was implemented.		21.7	73.9	4.4	21.7	78.3
34. Students are not able to complete as much material with the CBVE modules as with traditional methods.	2.0	21.6	62.7	13.7	23.6	76.4

TABLE 5 - Continued

Item	% SA	% A	% D	% SD	% SA+A	% D+SD
35. Students progress at a faster rate since I implemented CBVE.	1.9	55.8	40.4	1.9	57.7	42.3
36. Individualized instruction allows students to "get by" with little effort.	1.9	14.8	63.0	20.3	16.7	83.3
37. My CBVE students are learning more subject matter than the students I have taught using traditional teaching methods.	11.3	47.2	35.8	5.7	58.5	41.5

N = 55

TABLE 6

TOTAL ADMINISTRATOR QUESTIONNAIRE ADJUSTED PERCENT RESPONSE

Item	% SA	% A	% D	% SD	% SA+A	% D+SD
1. Teacher support for CBVE in our school is strong.	41.9	48.8	9.3		90.7	9.3
2. CBVE modules fit into our typical school year.	20.9	72.1	7.0		93.0	7.0
3. CBVE discourages student enrollment in our vocational education programs.		2.4	56.1	41.5	2.4	97.6
4. The CBVE program could accommodate a minimum of 10 percent increased enrollment.	2.3	37.2	41.9	18.6	39.5	60.5
5. The number of slide-tape machines provided by the CBVE program is inadequate.	23.3	27.9	41.9	7.0	51.2	48.9
6. There are too many "administrative problems" associated with CBVE.		7.0	76.7	16.3	7.0	93.0
7. The drop-out rate for vocational students has decreased since the implementation of CBVE.		32.4	62.2	5.4	32.4	67.6
8. CBVE is another educational fad and will be replaced by another system within the next few years.	2.4	12.2	73.2	12.2	14.6	85.4
9. Our teachers report that classroom management is difficult when students are using CBVE.		20.9	62.8	16.3	20.9	79.1
10. CBVE is more "cost effective" in our school than are traditional methods of instruction.	2.6	43.6	51.3	2.6	46.2	53.9

TABLE 6 - Continued

Item	% SA	% A	% D	% SD	% SA+A	% D+SD
11. Facilities at our school are appropriate for CBVE instruction.	9.3	53.5	25.6	11.6	62.8	37.2
12. There is no major difference in CBVE teaching methodology and the teaching methodology used by our teachers before CBVE was implemented.	2.3	14.0	76.7	7.0	16.3	83.7
13. CBVE evaluation is compatible with the traditional grading system used in our school.	2.3	67.4	27.9	2.3	69.7	30.2
14. The teachers inservice workshop, which introduces CBVE, does an adequate job.	7.1	81.0	11.9		88.1	11.9
15. The ease of using CBVE instruction hampers professional development in teachers.	2.3		67.4	30.2	2.3	97.6
16. The CBVE Instructor's Manuals provide helpful resource material and ideas for teachers.	11.6	86.0	2.3		97.6	2.3
17. CBVE increases teachers' effectiveness.	19.0	69.0	11.9		88.0	11.9
18. Teachers in my school have expressed satisfaction with CBVE.	18.6	69.8	11.6		88.4	11.6
19. I spend much time locating materials and answering teachers' questions regarding the implementation of CBVE.	2.4	14.6	70.7	12.2	17.0	82.9
20. CBVE requires more administrative resources than other methods of instruction.		32.6	60.5	7.0	32.6	67.5
21. CBVE modules and resource materials are easily obtained for our vocational education program.	11.6	44.2	37.2	7.0	55.8	44.2

TABLE 6 - Continued

Item	% SA	% A	% D	% SD	% SA+A	% D+SD
22. The modules and performance objectives of CBVE meet the needs of the students in our vocational education program.	11.6	72.1	11.6	4.7	83.7	16.3
23. Designing our vocational education program around the CBVE concept is difficult.		16.3	74.4	9.3	16.3	83.7
24. Students seem to progress at a faster rate since CBVE was implemented.	2.4	61.0	34.1	2.4	63.4	36.5
25. CBVE does not offer students the levels of proficiency required by job entry standards in our community.	4.7	7.0	79.1	9.3	11.7	88.4

N = 43

Table 7 represents initial SET normative data obtained from 40 secondary level teachers from the state of Kentucky (Cobb-Adams).[3]

TABLE 7

SET NORMATIVE MEANS FOR SECONDARY GRADES
(N = 40 CLASSROOMS)

SET Dimension					
1	2	3	4	5	Total
318.54	332.85	254.72	296.36	218.94	284.28

1 = Friendly and Cheerful
2 = Knowledgeable and Poised
3 = Lively and Interesting
4 = Firm Control
5 = Non-Directive

Table 8 represents SET rating by students from each vocational area participating within this study.

As indicated by Table 8, students from the CBVE sample viewed teachers significantly higher than those of the norm group with respect to demonstrating (1) a more lively and interesting teaching style, and (2) utilizing a less directive, more democratic teaching procedure. Conversely, rating by the CBVE students were significantly lower than the norm group SET items (1) knowledgeable and poised toward the curriculum, and (2) demonstrating less discipline strategies. No discernable differences were seen on SET Item 1 "Friendly and Cheerful" and students' overall perception of teaching behavior.

Correlations of SET dimensions with subscales of the student survey are reported in Table 9. Highly correlated with dimensions of the SET was subscale "Instructional Management." This subscale was designed to measure factors which contribute to the teaching and learning processes within the classroom. Generally, students viewed teachers highly on the SET, while rating the total CBVE program positive. SET dimension 4, Discipline Strategies, was, however, negatively correlated with all survey subscales. These negative correlations indicate teachers were perceived as non-autocratic for each subscale of the student survey.

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[3] R. D. Adams and Robert A. Cobb, "SET Normative Data" (unpublished research, Office of Educational Research, Western Kentucky University, 1977).

TABLE 8

STUDENT EVALUATION OF TEACHING RESPONSES BY OCCUPATIONAL AREA

			SET Dimensions[a]			
Occupational Area	1	2	3	4	5	Total
Tractor Mechanics (25)	294.00	286.00	260.00	244.00	292.00	275.20
Secretary (54)	347.22	308.33	278.70	245.37	258.33	287.59
Bank Teller (17)	358.82	341.17	320.58	261.76	305.88	317.64
Dental Assistant (15)	263.33	273.33	200.00	280.00	230.00	249.33
Food Preparation (127)	291.73	302.36	252.36	259.44	248.42	270.86
Child Care Worker (84)	301.19	297.61	254.76	269.64	245.23	273.69
Autobody (56)	287.50	308.03	251.78	289.28	250.89	277.50
Carpentry (74)	327.29	329.02	284.19	256.03	265.51	292.41
Machine Shop (117)	312.39	317.52	279.91	273.07	250.85	286.75
Cashier Checker (59)	322.03	298.30	295.76	261.01	295.76	294.57
Not Identified (17)	323.52	317.64	267.64	252.94	252.94	282.94
Sample Mean (745)	312.21	311.07	270.80	263.08	259.59	283.35

[a] SET 1 = Friendly and Cheerful
SET 2 = Knowledgeable and Poised
SET 3 = Lively and Interesting
SET 4 = Firm Control
SET 5 = Non-Directive (Democratic Procedure)

TABLE 9

INTERCORRELATIONS OF SURVEY AND S.E.T. DATA BY DIMENSION

Student Evaluation of Teaching (SET) Student Attitude Survey (CBVE)	Friendly/ Cheerful	Knowledgeable/ Poised	Lively/ Interesting	Discipline	Direct/ Non-Direct	Student Evaluation of Teaching Total
Instructional Plans	P = 0.2196 S = 0.055	P = 0.3055 S = 0.012*	P = 0.2693 S = 0.024*	P =-0.1138 S = 0.206	P = 0.3178 S = 0.010*	P = 0.2891 S = 0.017*
Student Impact	P = 0.1481 S = 0.143	P = 0.2158 S = 0.059	P = 0.2053 S = 0.068	P =-0.1597 S = 0.124	P = 0.2503 S = 0.034*	P = 0.1942 S = 0.080
Instructional Management	P = 0.3403 S = 0.006*	P = 0.3745 S = 0.003*	P = 0.3274 S = 0.008*	P =-0.2044 S = 0.069	P = 0.3522 S = 0.005*	P = 0.3501 S = 0.005*
Professional Development	P = 0.2211 S = 0.054	P = 0.2884 S = 0.017*	P = 0.1805 S = 0.096	P =-0.1136 S = 0.207	P = 0.2124 S = 0.062	P = 0.2284 S = 0.048*
Programmatic Aspects	P = 0.1467 S = 0.145	P = 0.1388 S = 0.158	P = 0.1552 S = 0.131	P =-0.2442 S = 0.038*	P = 0.2297 S = 0.047*	P = 0.1318 S = 0.171

P = Pearson Correlation Coefficient
* = Significant at 0.05 level

N = 54 (all cases)
classrooms

Quasi-Experimental Component

Two project developed instruments were used to collect necessary data to test the hypothesis posed in Chapter 1. Those instruments were: the Cognitive Skill Test (CST), and the Classroom Summary Report (CSR). The Performance Skill Test was incorporated into the CSR results.

Cognitive Skill Test Between Group Comparisons

The CST was administered on a pretest-posttest basis to eleven of the twelve classes of Bank Teller, Secretary, and Tractor Mechanics (one class of tractor mechanics withdrew from the study). Table 10 reveals the mean CST scores for all classes. Pretest_1 and posttest_1 means reflect the results of Instructional Period 1 (IP1), while pretest_2 and posttest_2 means reflect Instructional Period 2 (IP2) results. An apparent trend exists in the "gain scores" from Table 10. (The gain measure is the difference between the pretest mean and the posttest mean.) When CBVE was used for instructional delivery, a higher gain score was obtained in every class except Bank Teller Class B, IP1 and Secretary Class C, IP2. One possible explanation for this trend is that CBVE, as a method of instruction, is a more efficient way for students to learn the cognitive skills required for the respective occupational areas.

Tables 11 and 12 reflect the results of an Analysis of Variance (ANOVA) between groups. Classes taught in the CBVE-TRAD instructional sequence were treated as one group, while classes taught in the TRAD-CBVE sequence were treated as the comparison group. Thus, in Bank Teller, the four classes were combined into two groups.

Table 11 reflects the ANOVA results for IP1, while Table 12 reflects the ANOVA results for IP2 when the instruction methodology changed for each group. The N-sizes were changed during IP2 due to subject mortality within the various classes.

As Table 11 illustrates, four of the six groups began with similar cognitive levels in the subject areas. In Tractor Mechanics, the traditional approach group had a significantly higher (.05) pretest score than the CBVE approach group. However, the posttest mean of the CBVE group was significantly higher (.05) than the traditional approach group. Although all other CBVE approach groups had higher posttest means than their traditional counterparts, none approached significance during Instruction Period One.

During Instructional Period Two (Table 12), all groups had non-significant mean pretest scores. All CBVE approach groups except Secretary had higher mean posttest scores. The Bank Teller CBVE group had a significantly higher posttest mean (.01) than the traditional Bank Teller group. The Tractor Mechanics CBVE group scored significantly higher (.01) than the traditional approach group. Although the Secretary traditional group mean was higher than the CBVE group mean, it is non-significant.

TABLE 10

MEAN CST SCORES

Area	Pretest_1	IM (IP1)[a]	Posttest_1	GS[c]	Pretest_2	IM (IP2)[b]	Posttest_2	GS[c]	N
Bank Teller		Modules 39 - 41				Modules 42 - 46			
Class A	10.30	CBVE	17.70	7.40	7.25	TRADITIONAL	14.45	7.20	20
Class B	9.87	CBVE	14.28	4.41	6.50	TRADITIONAL	17.25	10.75	8
Class C	10.31	TRADITIONAL	14.92	4.61	6.92	CBVE	19.44	12.52	13
Class D	11.36	TRADITIONAL	16.64	5.28	8.21	CBVE	20.00	11.79	14
Secretary		Modules 38 - 40				Modules 41 - 43			
Class A	8.96	CBVE	13.95	4.99	9.96	TRADITIONAL	13.05	3.09	23
Class B	8.00	CBVE	12.67	4.07	6.83	TRADITIONAL	N/A	N/A	6
Class C	10.50	TRADITIONAL	13.70	3.20	9.57	CBVE	12.14	2.57	28
Class D	6.57	TRADITIONAL	9.83	3.26	6.00	CBVE	11.00	5.00	14
Tractor Mechanics		Modules 34 - 36				Modules 37 - 40			
Class A	3.54	CBVE	6.27	2.73	6.64	TRADITIONAL	8.00	1.36	11
Class B	4.60	CBVE	8.47	3.87	7.30	TRADITIONAL	9.84	2.54	20
Class C	5.44	TRADITIONAL	6.00	.56	7.19	CBVE	13.81	6.62	16

[a] Instructional Methodology used during Instructional Period One
[b] Instructional Methodology used during Instructional Period Two
[c] Gain Score - this score is the difference between the pretest and posttest means

TABLE 11

BETWEEN GROUP ANOVA OF CST SCORES FOR INSTRUCTIONAL PERIOD ONE

Occupational Area	Pretest$_1$	F	Posttest$_1$	F	Modules	N
Bank Teller						
CBVE	10.071	0.966	16.815	0.898	39-41	28
Traditional	10.852		15.846			27
Secretary						
CBVE	8.759	0.301	13.214	0.705	38-40	29
Traditional	9.214		12.513			42
Tractor Mechanics						
CBVE	4.226	5.474*	7.667	8.939*	34-36	31
Traditional	5.438		6.000			16

*Significant at the .05 level

TABLE 12

BETWEEN GROUP ANOVA OF CST SCORES FOR INSTRUCTIONAL PERIOD TWO

Occupational Area	Pretest$_2$	F	Posttest$_2$	F	Modules	N
Bank Teller						
Traditional	7.036	0.646	15.250	10.854*	42-46	28
CBVE	7.593		19.783			23
Secretary						
Traditional	9.310	1.015	13.045	3.777	41-43	22
CBVE	8.405		11.780			41
Tractor Mechanics						
Traditional	7.065	0.021	9.167	28.757*	37-40	30
CBVE	7.188		13.813			16

*Significant at the .01 level

Classroom Summary Report Comparisons

The data obtained from the CSR's submitted by teachers in the experimental group were subjected to an Analysis of Variance. ANOVA's were performed on classrooms within a given subject area, and between teaching approaches (CBVE vs. Traditional). Additionally, results are presented by instructional period. To aid the reader in interpreting the results, the data are presented in tabular form (see Tables 13, 14, and 15).

The results of Bank Teller Instructional Period One indicate that for modules 39 through 41 students taught in the CBVE approach required significantly less (.05) time to complete the modules. All other ratings showed no significant differences.

Instructional Period 2 indicates that Group II (CBVE approach) achieved a significantly higher mean effort rating, mean grade achieved, and mean performance scores than the traditional group. In IP2, the group taught using CBVE took a significantly longer time to complete modules 42 through 46. Bank Teller students using the CBVE approach tended to achieve equal or higher CSR variable scores than those students taught using traditional teaching methods.

The results of Secretary - Instructional Period 1 (Table 14) indicate that the group using the CBVE approach achieved a significantly higher grade and performance score for modules 37 through 40 than did students taught using the traditional approach. The students in the traditional classes also took a longer period of time to complete modules 37 through 40 than group I.

Instructional Period 2 results indicate that there was little or no statistical difference between the CBVE and traditional approaches with the exception of a significant difference in grade achieved with the traditional students scoring higher.

Analysis of the results derived from the Tractor Mechanics Instructional Periods indicates that for IP1 the traditional approach yielded a significantly higher mean score for effort rating, attitude rating, and grade achieved, while the CBVE group took a significantly longer time to complete modules 34 through 36.

For Instructional Period 2, comprised of modules 37 through 40, the group taught in the competency based mode performed at a significantly higher level with respect to mean effort, attitude, grade, and performance, than did those taught by the traditional approach. The results also indicate that the CBVE group took significantly less time to complete modules 37 through 40.

The above results should be interpreted with caution due to an unexplained skewness of some data within groups. This skewness may be attributed to either (1) teaching methodologies, or (2) individual differences among teachers. The reader is reminded that CSR data were obtained from subjective evaluations provided by the teachers.

TABLE 13

COMPARISON OF CLASSROOM SUMMARY REPORT (CSR) DATA BY APPROACH--BANK TELLER

Instructional Period #1 -- Modules 39 Through 41

Variables	Group I CBVE	Group II Traditional	F	N
Mean Effort Rating[a]	4.241	4.462	3.2772	54
Mean Attitude Rating	4.661	4.654	0.0043	54
Mean Grade	3.319	3.220	0.4693	54
Mean Number of Class Periods	2.384	2.538	16.1746*	54
Mean Number of Days Absent	**	**	**	0
Mean Performance Score	2.813	2.815	0.0005	54

Instructional Period #2 -- Modules 42 Through 46

Variables	Group I Traditional	Group II CBVE	F	N
Mean Effort Rating	3.821	4.4483	17.1692*	51
Mean Attitude Rating	4.486	4.548	6.1545	51
Mean Grade	2.772	3.713	45.3043*	52
Mean Number of Class Periods	1.276	2.330	14.1964*	52
Mean Number of Days Absent	**	**	**	0
Mean Performance Score	2.651	2.979	72.5274*	51

*Significant at the .05 level
**Insufficient data
[a] rating scales used were as follows: effort, 1=lowest, 5=highest
attitude, 1=lowest, 5=highest
performance, 1=not accomplished
3=fully accomplished

TABLE 14

COMPARISON OF CLASSROOM SUMMARY REPORT (CSR) DATA BY APPROACH--SECRETARY

Instructional Period #1 -- Modules 38 Through 40

Variables	Group I CBVE	Group II Traditional	F	N
Mean Effort Rating	4.714	4.692	0.0373	67
Mean Attitude Rating	4.857	4.684	1.9542	67
Mean Grade	3.881	3.289	17.3933*	66
Mean Number of Class Periods	1.875	3.607	10.05876*	47
Mean Number of Days Absent	3.5	3.5	**	4
Mean Performance Score	2.899	2.794	5.7289*	65

Instructional Period #2 -- Modules 41 Through 43

Variables	Group I Traditional	Group II CBVE	F	N
Mean Effort Rating	4.864	4.675	2.1753	61
Mean Attitude Rating	5.000	4.624	3.5417	61
Mean Grade	3.939	3.694	14.7355*	58
Mean Number of Class Periods	1.636	1.675	0.1667	60
Mean Number of Days Absent	4.667	4.667	**	1
Mean Performance Score	2.961	2.884	2.9641	61

*Significant at the .05 level
**Insufficient data

TABLE 15

COMPARISON OF CLASSROOM SUMMARY REPORT (CSR) DATA BY APPROACH--TRACTOR MECHANICS

Instructional Period #1 -- Modules 34 Through 36

Variables	Group I CBVE	Group II Traditional	F	N
Mean Effort Rating	2.848	4.333	23.3082*	27
Mean Attitude Rating	2.909	4.333	20.3517*	27
Mean Grade	2.515	3.312	6.3145*	27
Mean Number of Class Periods	2.909	1.854	38.7502*	27
Mean Number of Days Absent	**	**	**	0
Mean Performance Score	2.791	2.873	1.5605	46

Instructional Period #2 -- Modules 37 Through 40

Variables	Group I Traditional	Group II CBVE	F	N
Mean Effort Rating	3.114	4.719	31.3215*	27
Mean Attitude Rating	3.068	4.703	39.4619*	27
Mean Grade	2.900	3.672	8.8082*	26
Mean Number of Class Periods	3.300	2.281	21.2614*	26
Mean Number of Days Absent	1.25	1.25	**	1
Mean Performance Score	2.428	2.925	18.5813*	27

*Significant at the .05 level
**Insufficient data

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

The research reported herein was an attempt to provide decision makers a data base reflecting the effectiveness of CBVE as an instructional methodology. An attempt was made to provide data regarding the completion of the CBVE program objectives in Kentucky. In addition, the effectiveness of CBVE teaching methodology was compared to the traditional teaching methodology in vocational classes.

Conclusions

Because the data result from an interim period of study, detailed conclusions and recommendations would be premature at this time. However, conclusion statements regarding the null hypotheses stated in Chapter I may be made. It should be remembered that these conclusion statements are reflective of a limited study, and further research during Phase II will yield more conclusive and detailed results.

The interim conclusions from the 1976-77 study were:

1. All surveyed groups responded favorably to approximately 75 percent of all survey statements regarding CBVE. Administrators were most favorable in their responses, followed by teachers, and then students.

2. The CST posttest scores of the CBVE instructed Tractor Mechanics classes were significantly higher than the traditionally taught Tractor Mechanics classes.

3. The CST posttest scores of the CBVE instructed Bank Teller classes were significantly higher than the traditionally taught Bank Teller classes.

4. No significant differences were found between the posttest scores of CBVE taught and traditionally taught Secretary classes.

5. Higher Gain Scores were achieved by eight of the eleven classes when CBVE instruction was utilized, whereas only two of the eleven classes achieved higher Gain Scores utilizing traditional instruction. (One class provided insufficient data.)

6. Bank Teller, Tractor Mechanics, and Secretary students had significantly higher Performance Skill Test scores when instructed using CBVE methodology as compared to traditional teaching methodology.

7. There was no significant difference in attitude toward learning, as indicated by teachers, of students taught in a CBVE approach when compared to students taught in a traditional instruction approach.

8. CBVE instructed students received a slightly higher, although not significant, effort rating from teachers than did traditionally taught students.

Approximately 25 percent of all teachers, administrators, and students involved in the CBVE program in the 1976-77 school year participated in an extensive research project evaluating CBVE's effectiveness as a method of vocational instruction. A majority of participating students, teachers, and administrators felt that CBVE was meeting the career needs of students, that CBVE students were progressing at a faster rate than students taught in a traditional mode, and that CBVE was inexpensive to implement in the schools' present facilities. Furthermore, data indicate that students not only progressed faster, but learned a greater amount of subject matter than students in a traditional setting (significant at the .05 level).

Recommendation

Because the results are of a limited nature, reflecting 1976-77 Phase I efforts, no recommendations are offered. With the conclusion of the 1977-78 Phase II study, detailed recommendations, as well as conclusions, will be offered.

References

Adams, R. D., and Cobb, Robert A. "SET Normative Data." Unpublished research, Office of Educational Research, Western Kentucky University, 1977.

Adams, R. D., and Sandefur, J. T. "An Evaluation of Teaching: An Interim Research Report." Journal of Teacher Education, XXVII (Spring, 1976).

APPENDIX A

Teacher Questionnaire

WESTERN KENTUCKY UNIVERSITY
BOWLING GREEN, KENTUCKY 42101

Center for Career and
Vocational Teacher Education

Dear Teacher/Administrator:

Western Kentucky University and the Bureau of Vocational Education are attempting to document the progress of Competency Based Vocational Education (CBVE) in Kentucky. The data obtained from CBVE programs such as yours will be used to facilitate the future, broader based, implementation of CBVE in Kentucky.

A major part of this effort involves the attitudes of administrators, teachers, and students who have been exposed to CBVE. We are, therefore, requesting your help in assessing attitudes toward CBVE.

Please take a few minutes to fill out the attached survey giving your honest opinions of CBVE. You are not required to sign your name. Data generated by this survey will be tabulated on a state-wide basis; your anonymity is guaranteed, so please feel free to respond as openly as you can.

When you have finished, please return the survey, in the enclosed envelope, to the collection point in your school office. All the surveys will be collected by a member of your vocational regional staff in the next few days.

I wish to thank you in advance for your valuable help in making this project a success.

Sincerely,

Roger D Vincent

Project Director

Please do not sign your name.

COMPETENCY BASED VOCATIONAL EDUCATION (CBVE)

TEACHER QUESTIONNAIRE

Introduction: This questionnaire has been developed to collect your opinions about various aspects of CBVE. The information gathered from you will be summarized on a statewide basis. There is no way for us nor anyone else to know how you responded; so please be as candid and honest as you can.

Directions: Please read each statement and indicate the extent to which you agree or disagree by circling one of the following:

SA	A	D	SD
Strongly Agree	Agree	Disagree	Strongly Disagree

1. Transition from module to module is difficult for students.	SA	A	D	SD
2. Classroom management is difficult when students are using modules.	SA	A	D	SD
3. I have had no major problems assigning grades to my CBVE students.	SA	A	D	SD
4. CBVE allows my students to do more "independent investigations" than my previous method of instruction.	SA	A	D	SD
5. I feel uncomfortable using the CBVE materials.	SA	A	D	SD
6. CBVE restricts my freedom in the classroom.	SA	A	D	SD
7. CBVE allows me to keep up to date in my occupational area.	SA	A	D	SD
8. I am unable to diagnose learning difficulties using the CBVE modules.	SA	A	D	SD
9. CBVE's objectives are "not in tune" with their respective occupational areas.	SA	A	D	SD
10. CBVE improves overall teacher effectiveness.	SA	A	D	SD
11. CBVE reference and resource materials are available to me.	SA	A	D	SD
12. Administrative support for CBVE is strong.	SA	A	D	SD

13. CBVE is a fad and will be replaced by another system within the next few years. SA A D SD

14. The teachers inservice workshop, which introduces CBVE, does an adequate job. SA A D SD

15. CBVE modules fit into our typical school year. SA A D SD

16. The number of slide tape machines provided is adequate for my students' needs. SA A D SD

17. I often refer to the Instructor's Manual for resource materials and ideas. SA A D SD

18. Using CBVE modules requires more organizational time than do other methods of instruction. SA A D SD

19. There is no major difference in CBVE teaching methodology and the teaching methodology I used before I implemented CBVE. SA A D SD

20. CBVE evaluation is difficult to translate into traditional grading systems. SA A D SD

21. The organization of the Instructor's Manual needs to be simplified. SA A D SD

22. Students are better motivated by the CBVE modules than with my previous instructional methods. SA A D SD

23. Students seem more "task oriented" using CBVE modules. SA A D SD

24. The reading level of the modules is too difficult for my students' abilities. SA A D SD

25. The introduction of the CBVE module concept has kept students in school who may have dropped out of a traditional program. SA A D SD

26. Most students dislike the CBVE approach. SA A D SD

27. Facilities at my school are appropriate for CBVE instruction. SA A D SD

28. CBVE has increased student enrollment in our vocational education program. SA A D SD

29. I do not like to teach under a Competency Based Vocational Educational System. SA A D SD

30. Teaching techniques can be more creative with CBVE materials. SA A D SD

31. My audio visual equipment frequently breaks down. SA A D SD

32. The students like the module presentation better than the traditional forms of presenting material. SA A D SD

33. More students than ever before have expressed interest in taking my class since CBVE was implemented. SA A D SD

34. Students are not able to complete as much material with the CBVE modules as with traditional methods. SA A D SD

35. Students progress at a faster rate since I implemented CBVE. SA A D SD

36. Individualized instruction allows students to "get by" with little effort. SA A D SD

37. My CBVE students are learning more subject matter than the students I have taught using traditional teaching methods. SA A D SD

38. What vocational area do you teach?

Agriculture

- ☐ Tractor Mechanics

Business and Office

- ☐ Secretarial
- ☐ Bank Teller

Distributive Education

- ☐ Cashier Checker

Health

- ☐ Dental Assistant

Home Economics

- ☐ Food Preparation
- ☐ Child Care Worker

Industrial Education

- ☐ Auto Body
- ☐ Carpentry
- ☐ Machine Shop

APPENDIX B

Student Questionnaire

Please do not sign your name.

COMPETENCY BASED VOCATIONAL EDUCATION

STUDENT SURVEY

PART A

1. Check appropriate box

   ☐ Female ☐ Male

2. Check your present grade level

   - ☐ High school junior
   - ☐ High school senior
   - ☐ Post-Secondary

3. Check your vocational area

   Agriculture
   - ☐ Tractor Mechanics

   Business and Office
   - ☐ Secretarial
   - ☐ Bank Teller

   Distributive Education
   - ☐ Cashier Checker

   Health
   - ☐ Dental Assistant

   Home Economics
   - ☐ Food Preparation
   - ☐ Child Care Worker

   Industrial Education
   - ☐ Auto Body
   - ☐ Carpentry
   - ☐ Machine Shop

4. Check the approximate number of modules you have completed

   - ☐ 1 - 9 Modules
   - ☐ 10 - 20 Modules
   - ☐ 21 - 30 Modules
   - ☐ 31 - 40 Modules
   - ☐ 41 or More

PART B

Below are statements regarding your opinion of Competency Based Vocational Education (CBVE) modules. Since you have used these modules, your honest, personal opinion is valuable to us. There are no right or wrong answers, so please do not hesitate to give your honest opinion.

Instructions

Read each statement and the four possible responses next to the statement. When you have decided which response is closest to your opinion, circle one of the following:

SA	A	D	SD
Strongly Agree	Agree	Disagree	Strongly Disagree

For example:

Chicago is a big city. [✓ SA] A D SD

1. The learning activities instructions are clear and to the point. SA A D SD
2. The student self-checks are very valuable. SA A D SD
3. I feel confused by the instruction sheets within the modules. SA A D SD
4. My teacher is always friendly toward students. SA A D SD
5. Completing CBVE modules is a good use of my time. SA A D SD
6. The modules help me to solve problems. SA A D SD
7. I can apply very little of what is in the modules to practical situations. SA A D SD
8. CBVE instruction does not seem to be any better than the kind of instruction we had before. SA A D SD
9. I have difficulty reading the material in the modules. SA A D SD
10. My teacher knows a lot about the subject. SA A D SD
11. The instructor's final checklist helps me know what performance my teacher expects of me. SA A D SD
12. While working on the modules, I feel isolated and all alone. SA A D SD
13. My teacher is never dull or boring. SA A D SD

14. Using CBVE modules has increased my ability to think on my own. SA A D SD

15. I think CBVE is a big joke. SA A D SD

16. I have enough time to learn the materials that are in the modules. SA A D SD

17. CBVE is a poor way to learn skills. SA A D SD

18. My teacher expects a lot from students. SA A D SD

19. I would like my teacher to teach the way she/he did before CBVE. SA A D SD

20. I think my other classes should also use modules. SA A D SD

21. My teacher asks for students' opinion before making decisions. SA A D SD

22. I don't really understand what CBVE is all about. SA A D SD

23. When we use CBVE, my teacher has more time to work with us individually. SA A D SD

24. I enjoy class more when we use CBVE. SA A D SD

25. I am often bored when I use CBVE modules. SA A D SD

26. My teacher is usually cheerful and optimistic. SA A D SD

27. The slide-tape presentations add very little to CBVE instructions. SA A D SD

28. My teacher never has enough time to answer my questions about the material in the modules. SA A D SD

29. I am not sure how much I have learned after I complete a module. SA A D SD

30. The introduction makes me want to learn more about the tasks in the modules. SA A D SD

31. My teacher is not confused by unexpected questions. SA A D SD

32. I seem to learn faster when I use CBVE modules. SA A D SD

33. It is hard for me to follow the learning activities instructions. SA A D SD

34. I want to do my best while I am working on a module. SA A D SD

Please turn the page.

35.	My teacher makes learning more like fun than work.	SA	A	D	SD
36.	I feel at ease when I am working with CBVE modules.	SA	A	D	SD
37.	The drawings and illustrations help me to understand the modules better.	SA	A	D	SD
38.	The modules give me facts instead of just nice-to-know information.	SA	A	D	SD
39.	After completing CBVE, I will feel qualified to get a job.	SA	A	D	SD
40.	My teacher doesn't let students get away with anything.	SA	A	D	SD
41.	The CBVE modules do not teach me enough.	SA	A	D	SD
42.	The module instruction sheets are easy to follow.	SA	A	D	SD
43.	My teacher often gives students a choice in assignments.	SA	A	D	SD
44.	I don't learn much from the student self-checks because the answers are given.	SA	A	D	SD
45.	CBVE modules seem to fit my style of learning.	SA	A	D	SD
46.	My teacher does not seem to care whether I am learning or not.	SA	A	D	SD

APPENDIX C

Administrator Questionnaire

WESTERN KENTUCKY UNIVERSITY
BOWLING GREEN, KENTUCKY 42101

Center for Career and
Vocational Teacher Education

Dear Teacher/Administrator:

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A major part of this effort involves the attitudes of administrators, teachers, and students who have been exposed to CBVE. We are, therefore, requesting your help in assessing attitudes toward CBVE.

Please take a few minutes to fill out the attached survey giving your honest opinions of CBVE. You are not required to sign your name. Data generated by this survey will be tabulated on a state-wide basis; your anonymity is guaranteed, so please feel free to respond as openly as you can.

When you have finished, please return the survey, in the enclosed envelope, to the collection point in your school office. All the surveys will be collected by a member of your vocational regional staff in the next few days.

I wish to thank you in advance for your valuable help in making this project a success.

Sincerely,

Roger D Vincent

Project Director

Please do not sign your name.

COMPETENCY BASED VOCATIONAL EDUCATION

ADMINISTRATOR SURVEY

Below are statements regarding the Competency Based Vocational Education (CBVE) program in your school. Please indicate the extent to which you agree or disagree with these statements by CIRCLING ONE of the following:

SA	A	D	SD
Strongly Agree	Agree	Disagree	Strongly Disagree

1.	Teacher support for CBVE in our school is strong.	SA	A	D	SD
2.	CBVE modules fit into our typical school year.	SA	A	D	SD
3.	CBVE discourages student enrollment in our Vocational Education Programs.	SA	A	D	SD
4.	The CBVE program could accommodate a minimum of 10% increased enrollment.	SA	A	D	SD
5.	The number of slide-tape machines provided by the CBVE program is inadequate.	SA	A	D	SD
6.	There are too many "administrative problems" associated with CBVE.	SA	A	D	SD
7.	The drop-out rate for vocational students has decreased since the implementation of CBVE.	SA	A	D	SD
8.	CBVE is another educational fad and will be replaced by another system within the next few years.	SA	A	D	SD
9.	Our teachers report that classroom management is difficult when students are using CBVE.	SA	A	D	SD
10.	CBVE is more "cost effective" in our school than are traditional methods of instruction.	SA	A	D	SD
11.	Facilities at our school are appropriate for CBVE instruction.	SA	A	D	SD
12.	There is no major difference in CBVE teaching methodology and the teaching methodology used by our teachers before CBVE was implemented.	SA	A	D	SD
13.	CBVE evaluation is compatible with the traditional grading system used in our school.	SA	A	D	SD
14.	The teachers inservice workshop, which introduces CBVE, does an adequate job.	SA	A	D	SD
15.	The ease of using CBVE instruction hampers professional development in teachers.	SA	A	D	SD

16. The CBVE Instructor's Manuals provide helpful resource material and ideas for teachers. SA A D SD

17. CBVE increases teachers' effectiveness. SA A D SD

18. Teachers in my school have expressed satisfaction with CBVE. SA A D SD

19. I spend much time locating materials and answering teacher's questions regarding the implementation of CBVE. SA A D SD

20. CBVE requires more administrative resources than other methods of instruction. SA A D SD

21. CBVE modules and resource materials are easily obtained for our Vocational Education Program. SA A D SD

22. The modules and performance objectives of CBVE meet the needs of the students in our Vocational Education Program. SA A D SD

23. Designing our vocational education program around the CBVE concept is difficult. SA A D SD

24. Students seem to progress at a faster rate since CBVE was implemented. SA A D SD

25. CBVE does not offer students the levels of proficiency required by job entry standards in our community. SA A D SD

APPENDIX D

All CST Pretests

Pre-Test: Objectives BT 39-46

Date ____________________

Directions: For each of the following questions, circle the letter of the best answer.

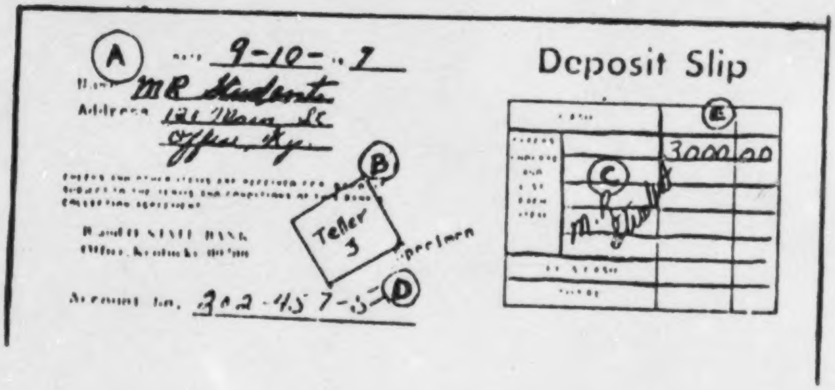
Pretest - BT 39-46

1. When examining a check for certification, which of the following is not true?

   A. The signature must be genuine.
   B. It must be written on the home bank.
   C. The payee must be named.
   D. Both amounts should agree.
   E. None of these

2. In preparing the following deposit slip which of the following points is in error?

   A. C
   B. D and E
   C. A
   D. B
   E. None of these


Deposit Slip

9-10-7

MR Students

Account No. 302-457-3

Teller J

Specimen

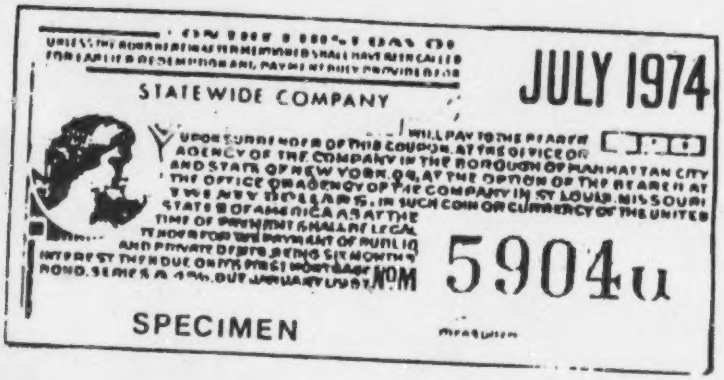
3000.00

3. When cashing a traveler's check for $100.50, you would first:

   A. Dispense the large bills
   B. Stamp the face of the check with the teller's stamp
   C. Dispense the small bills
   D. Dispense the coins
   E. None of these

4. The following bond coupon is missing which of the characteristics of all sudden coupons?

   A. Signature of the treasurer of the issuing company.
   B. Maturity date of the bond
   C. The bond number
   D. The coupon number
   E. None of these


JULY 1974

STATEWIDE COMPANY

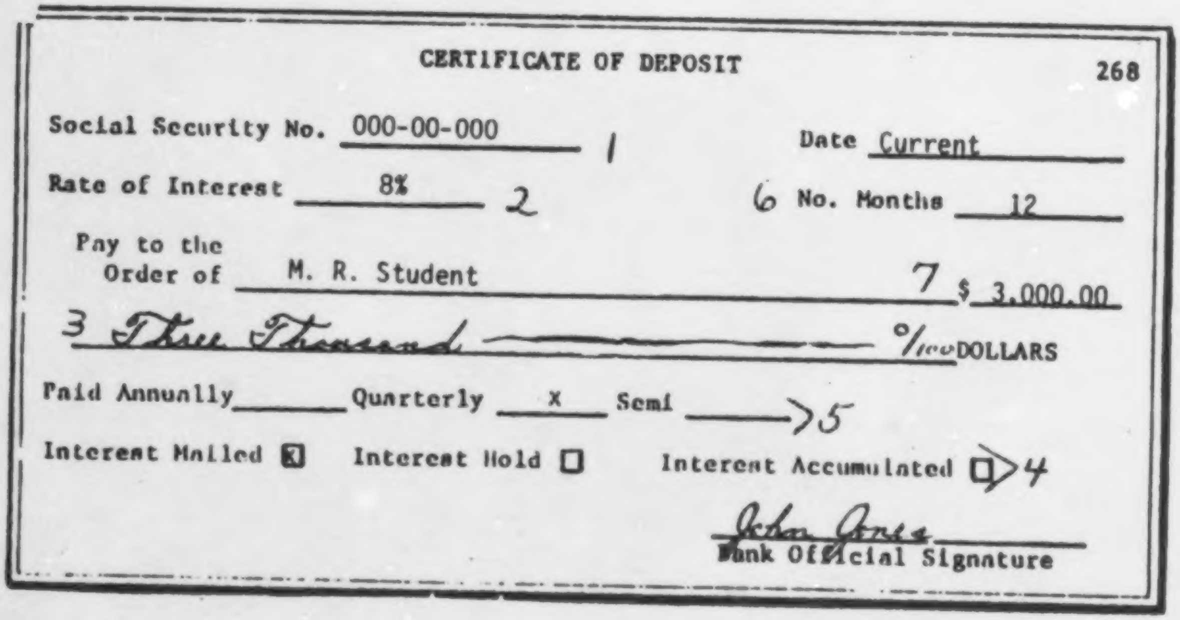
WILL PAY TO THE BEARER UPON SURRENDER OF THIS COUPON, AT THE OFFICE OR AGENCY OF THE COMPANY IN THE BOROUGH OF MANHATTAN CITY AND STATE OF NEW YORK, OR, AT THE OPTION OF THE BEARER AT THE OFFICE OR AGENCY OF THE COMPANY IN ST LOUIS, MISSOURI [illegible] DOLLARS, IN SUCH COIN OR CURRENCY OF THE UNITED STATES OF AMERICA AS AT THE TIME OF PAYMENT SHALL BE LEGAL TENDER FOR THE PAYMENT OF PUBLIC AND PRIVATE DEBTS BEING SIX MONTHS INTEREST THEN DUE ON ITS FIRST MORTGAGE BOND, SERIES A [illegible] DUE JANUARY [illegible]

No. M 5904u

SPECIMEN

5. On the following certificate of deposit what point(s) is (are) in error?

   A. 5 only
   B. 3 only
   C. 2 and 6
   D. 4 and 5
   E. None of these



CERTIFICATE OF DEPOSIT 268

Social Security No. 000-00-000 1 Date Current

Rate of Interest 8% 2 6 No. Months 12

Pay to the Order of M. R. Student 7 $ 3,000.00

3 Three Thousand ——————— 0/100 DOLLARS

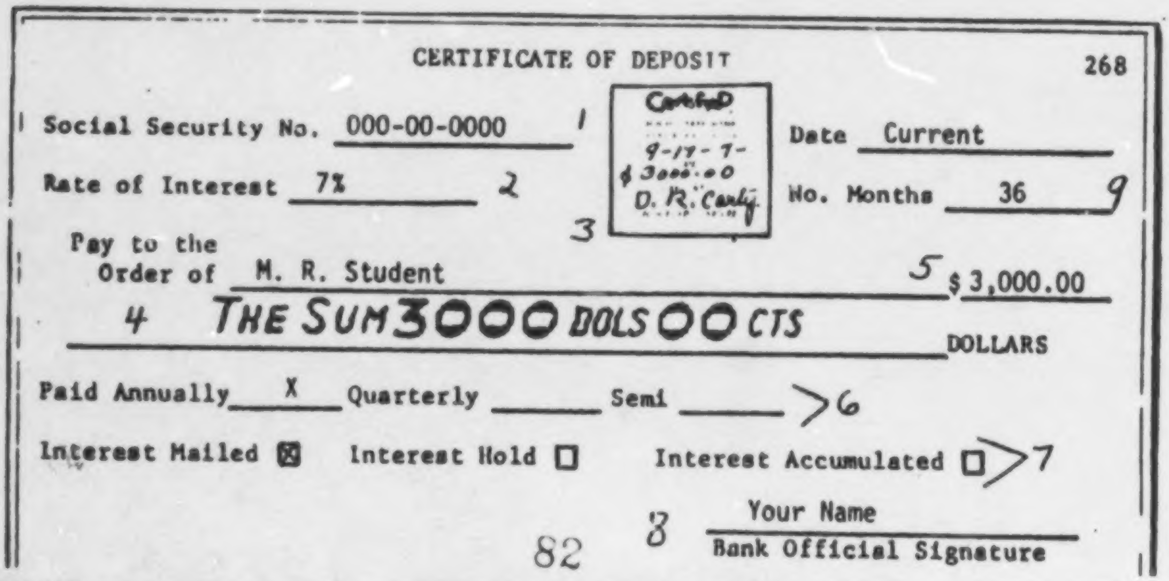
Paid Annually ____ Quarterly X Semi ____ >5

Interest Mailed ☒ Interest Hold ☐ Interest Accumulated ☐ >4

John Jones
Bank Official Signature

6. On the following certificate of deposit what point(s) is (are) in error?

   A. 4 only
   B. 6 and 7
   C. 2 and 8
   D. 3 only
   E. None of these



CERTIFICATE OF DEPOSIT 268

Social Security No. 000-00-0000 1 Date Current

Rate of Interest 7% 2 No. Months 36 9

Certified
9-17-7-
$3000.00
D. R. Carly
3

Pay to the Order of M. R. Student 5 $ 3,000.00

4 THE SUM 3000 DOLS 00 CTS DOLLARS

Paid Annually X Quarterly ____ Semi ____ >6

Interest Mailed ☒ Interest Hold ☐ Interest Accumulated ☐ >7

8 Your Name
Bank Official Signature

7. Which of the following items is not required in order to prepare a cash advance on bank credit cards?

   A. Customer's bank credit card
   B. Customer's checking account number
   C. Cash advance drafts
   D. Credit card authorization number
   E. None of these

8. Money deposited by a customer for federal income tax is:

   A. Designated for the Federal Reserve Bank of Cleveland
   B. Placed in a safe deposit box
   C. Held at the local bank until April 15
   D. Placed in a special savings account.
   E. None of these

9. After the check is placed in the check writer the first step is to:

   A. Depress the clear key
   B. Depress the appropriate keys for the amount to be inscribed.
   C. Adjust the tabs
   D. Disengage the repeat key
   E. None of these

10. M. R. Student was issued a Series E bond on December 15, 1976. Today is January 15, 1977. M.R. Student wishes to cash his bond today.

   A. He must wait at least another month
   B. He may cash it today
   C. He must get the bank manager's approval
   D. Only the bond teller may cash it
   E. None of these

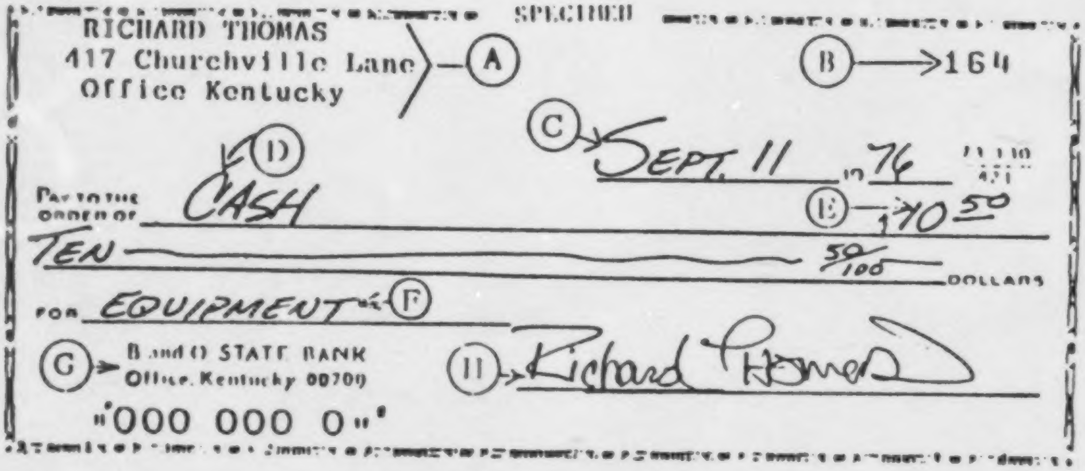
11. Which of the following is not the proper procedure for completion of a cash advance on a bank credit card?

   A. Return the credit card
   B. Return second copy of the Cash Advance Draft to the customer
   C. Stamp both copies of the Cash Advance Draft with the teller's number and the date.
   D. Count out the correct amount of cash using the proper method for dispensing cash.
   E. None of these

12. Which of the following is false with respect to coupon-bearing bonds?

   A. School districts may issue bonds to support building programs.
   B. A coupon bearing bond has the same face value at maturity.
   C. Like the Series E bonds, the interest on the bonds is collected upon redemption.
   D. Coupon bearing bonds are usually a long term investment.
   E. None of these

Assume today is September 11, 1976. You are employed for the First National City Bank. Your customer, Mr. Richard Thomas, wishes to have the following check certified:



SPECIMEN

RICHARD THOMAS
417 Churchville Lane
Office Kentucky
Ⓐ

Ⓑ 164

Ⓒ SEPT. 11 19 76

Ⓓ

PAY TO THE ORDER OF CASH Ⓔ $\$10^{50}$

TEN $\frac{50}{100}$ DOLLARS

FOR EQUIPMENT Ⓕ

Ⓖ B and O STATE BANK
Office, Kentucky 00709

Ⓗ Richard Thomas

"000 000 0"

13. Which of the following should you examine as negotiability points?

    A. H, G, B
    B. E, F, G
    C. D, C, E
    D. All of the above
    E. None of the above

14. Which of the following is incorrect?

    A. A
    B. E
    C. F
    D. G
    E. None of the above

15. Which of the following are not negotiability points?

    A. C
    B. D
    C. E
    D. G
    E. None of the above

16. When a teller receives a Federal Tax Deposit computer card from a customer, the teller must:

    A. notify the IRS regional office.
    B. stamp the name of the bank in the designated spaces on the card.
    C. place his signature in the lower right-hand corner of the card.
    D. have the customer sign the card in the lower right-hand corner.
    E. none of these

17. Which of the following steps is not required to operate a checkwriter.

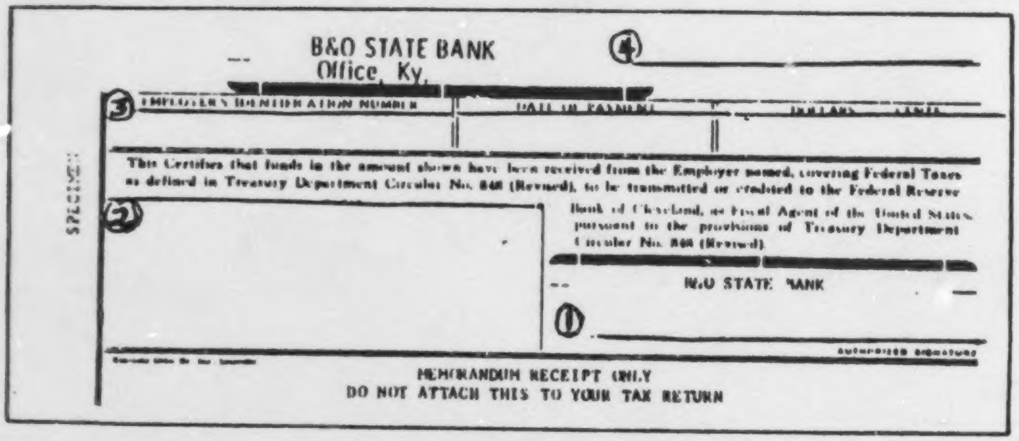
    A. Insert check and align with tabs
    B. Depress the lock mechanism
    C. Depress appropriate amount key
    D. Pull printing lever
    E. None of these

18. The first step in issuing a certificate of deposit is to:

    A. Examine the check for acceptability
    B. Have the head teller approve the transaction
    C. Receive the check in payment from the customer
    D. Prepare a Cash-In slip
    E. None of these

19. Below is a sample memorandum receipt for Tax Deposit. On which line does the customer place his/her signature?

    A. 1
    B. 2
    C. 3
    D. 4
    E. None of these



B&O STATE BANK
Office, Ky.

④

③ EMPLOYER'S IDENTIFICATION NUMBER | DATE OF PAYMENT | DOLLARS CENTS

This Certifies that funds in the amount shown have been received from the Employer named, covering Federal Taxes as defined in Treasury Department Circular No. 848 (Revised), to be transmitted or credited to the Federal Reserve Bank of Cleveland, as Fiscal Agent of the United States, pursuant to the provisions of Treasury Department Circular No. 848 (Revised).

②

B&O STATE BANK

①

AUTHORIZED SIGNATURE

MEMORANDUM RECEIPT ONLY
DO NOT ATTACH THIS TO YOUR TAX RETURN

20. When preparing a cashier's check, how many copies including the original are needed?

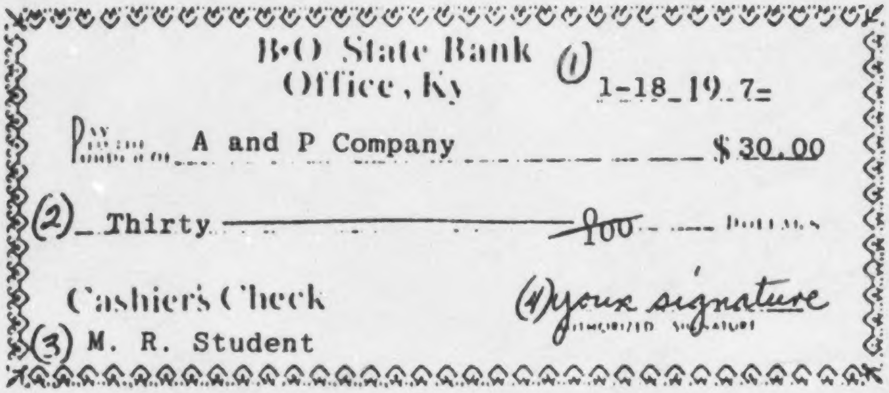
    A. 2
    B. 3
    C. 1
    D. 4
    E. None of these

21. The space provided on Series E bonds, for the signature of the person identifying the owner (if necessary), is:

    A. on the back, lower right hand corner
    B. on the back, top left hand corner
    C. on the back, lower left hand corner
    D. on the front, lower right hand corner
    E. none of these

22. Today is January 18, 1977. M.R. Student gives you a $30.00 check for the amount of a cashier's check to be made out to the A & P Company. You have prepared the following cashier's check. Which item on the check is not correct?

A. 1
B. 2
C. 3
D. 4
E. None of these



B•O State Bank
Office, Ky
(1) 1-18 19 7=

Pay to the order of A and P Company $30.00

(2) Thirty 00/100 Dollars

Cashier's Check
(3) M. R. Student

(4) your signature
Authorized Signature

23. Which of the following is not correct? After a check has been certified, the teller:

A. prepares a deposit slip
B. makes the deposit slip out to General Ledger
C. Gives the certified check and the original copy of the Certification Form to the customer
D. writes the amount of the check on the cash line of the deposit slip
E. none of these

24. Which types of savings bonds will you as a teller be dealing with?

A. Series H
B. Series E
C. Series H and E
D. Series F
E. None of these

25. Below is a list of forms that are involved when issuing a cashier's check. Which of the following forms are given to the customer?

A. 2 and 6
B. 1, 2, and 6
C. 1 and 2
D. 1 and 6
E. None of these

Form
Cashier's check (1)
Customer copy of Cashier's check (2)
Customer's check (gave teller a check for amount of Cashier's check) (3)
File copy of Cashier's check (4)
First copy of Cash-In ticket (gave teller cash for amount of Cashier's check) (5)
Second copy of Cash-In ticket (6)

26. Which of the following procedures would be incorrect when cashing a traveler's check?

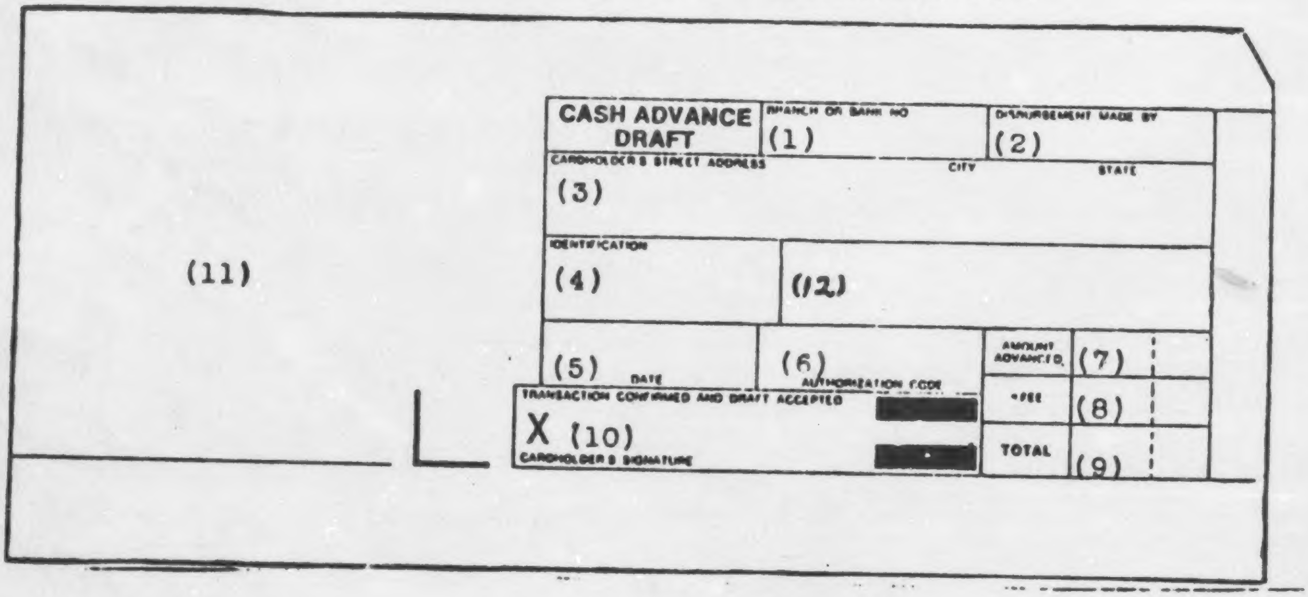
A. Have the customer sign the checks in the lower left hand corner
B. Verify the signatures
C. Stamp the face of each with the teller's stamp
D. Stamp or write in the date and name of the customer as payee
E. None of these

27. Which of the following steps is not appropriate for processing tax payments.

A. Receive customer's check
B. Prepare a certified check made out to IRS
C. Complete computer card
D. Prepare memorandum receipt
E. Perform bookkeeping tasks

28. On the blank cash advance draft shown below, where would the teller place his/her signature?

A. 4
B. 6
C. 2
D. 1
E. teller's signature is not required on a cash advance draft


CASH ADVANCE DRAFT
BRANCH OR BANK NO
(1)
DISBURSEMENT MADE BY
(2)
CARDHOLDER'S STREET ADDRESS
CITY
STATE
(3)
IDENTIFICATION
(4)
(12)
(11)
(5)
DATE
(6)
AUTHORIZATION CODE
AMOUNT ADVANCED
(7)
FEE
(8)
TOTAL
(9)
TRANSACTION CONFIRMED AND DRAFT ACCEPTED
[redacted]
X (10)
[redacted]
CARDHOLDER'S SIGNATURE

29. On the blank cash advance draft shown above, point number 11 is for:

A. The identification card imprint
B. The teller's stamp
C. The credit card imprint
D. The seal of authorization
E. None of these

30. On the blank cash advance draft shown above, point number 12 is for:

A. The teller's stamp
B. The head teller's signature
C. The account number
D. The customer's social security number
E. None of these

31. A $50 bond was issued to Mrs. Student in December, 1970. Today is September 1, 1974. What would be the redemption value of bond, using the Table below, if she cashed it today.

A. $21.98
B. $43.96
C. Not eligible for payment
D. $50.00
E. None of these

U.S. SAVINGS BONDS, SERIES E—REDEMPTION VALUES BY DENOMINATION—SEPTEMBER 1

ISSUE YEAR	ISSUE MONTHS	$10	$25	$50	$75	$100	$200	$500	$1,000
1974	Aug. thru Sep.		(Not eligible for payment)						
	Apr. thru July		18.75	37.50	56.25	75.00	150.00	375.00	750.00
	Jan. thru Mar.		19.10	38.20	57.30	76.40	152.80	382.00	764.00
1973	Dec.		19.10	38.20	57.30	76.40	152.80	382.00	764.00
	Oct. thru Nov.		19.05	38.10	57.15	76.20	152.40	381.00	762.00
	June thru Sep.		19.56	39.12	58.68	78.24	156.48	391.20	782.40
	Apr. thru May		19.51	39.02	58.53	78.04	156.08	390.20	780.40
	Jan. thru Mar.		20.00	40.00	60.00	80.00	160.00	400.00	800.00
1972	Dec.		20.00	40.00	60.00	80.00	160.00	400.00	800.00
	Oct. thru Nov.		19.95	39.90	59.85	79.80	159.60	399.00	798.00
	June thru Sep.		20.45	40.90	61.35	81.80	163.60	409.00	818.00
	Apr. thru May		20.40	40.80	61.20	81.60	163.20	408.00	816.00
	Jan. thru Mar.		20.93	41.86	62.79	83.72	167.44	418.60	837.20
1971	Dec.		20.93	41.86	62.79	83.72	167.44	418.60	837.20
	Oct. thru Nov.		20.88	41.76	62.64	83.52	167.04	417.60	835.20
	June thru Sep.		21.44	42.88	64.32	85.76	171.52	428.80	857.60
	Apr. thru May		21.39	42.78	64.17	85.56	171.12	427.80	855.60
	Jan. thru Mar.		21.98	43.96	65.94	87.92	175.84	439.60	879.20
1970	Dec.		21.98	43.96	65.94	87.92	175.84	439.60	879.20
	Oct. thru Nov.		21.93	43.86	65.79	87.72	175.44	438.60	877.20
	June thru Sep.		22.58	45.16	67.74	90.32	180.64	451.60	903.20
	Apr. thru May		22.53	45.06	67.59	90.12	180.24	450.60	901.20
	Jan. thru Mar.		23.22	46.44	69.66	92.88	185.76	464.40	928.80
1969	Dec.		23.22	46.44	69.66	92.88	185.76	464.40	928.80
	Oct. thru Nov.		23.16	46.32	69.48	92.64	185.28	463.20	926.40
	June thru Sep.		23.88	47.76	71.64	95.52	191.04	477.60	955.20
	Apr. thru May		23.28	46.56	69.84	93.12	186.24	465.60	931.20
	Jan. thru Mar.		23.95	47.90	71.85	95.80	191.60	479.00	958.00

32. A cashier's check is a special check that is

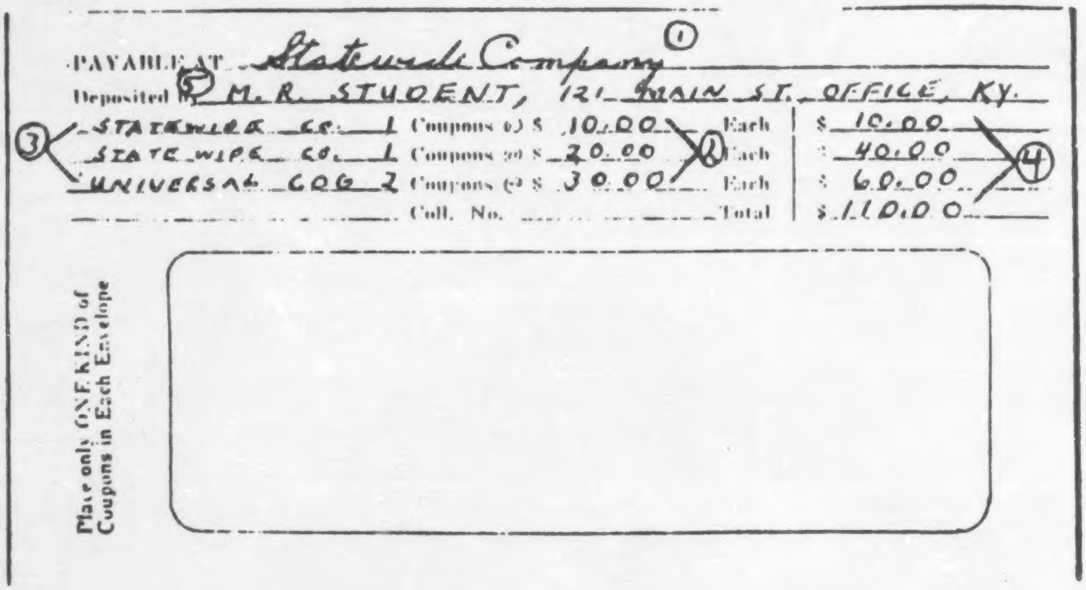
A. Drawn against the customer's account
B. Always purchased by the customer with cash
C. Drawn by a bank upon its own funds
D. Always purchased by a customer with a personal check
E. None of these

33. When cashing traveler's checks, married women:

A. Must sign and countersign their maiden name
B. Must sign and countersign their initials and last name
C. Must sign and countersign their given (first) and last name
D. Must sign and countersign their given (first) and maiden name
E. None of these

34. The following bond envelope contains errors at what point(s)?

A. 2, 3
B. 3, 4
C. 2 only
D. 4 only
E. None of these



PAYABLE AT Statewide Company ①
Deposited by ⑤ M. R. STUDENT, 121 MAIN ST. OFFICE, KY.
③ STATEWIDE CO. 1 Coupons @ $ 10.00 ② Each $ 10.00 ④
STATE WIDE CO. 1 Coupons @ $ 20.00 Each $ 40.00
UNIVERSAL CO. 2 Coupons @ $ 30.00 Each $ 60.00
Coll. No. Total $ 110.00

Make only ONE KIND of Coupons in Each Envelope

35. What information is not contained on the back of a savings bond?

A. Payment information
B. Terms and Conditions
C. Request for Payment
D. Issue Date
E. None of these

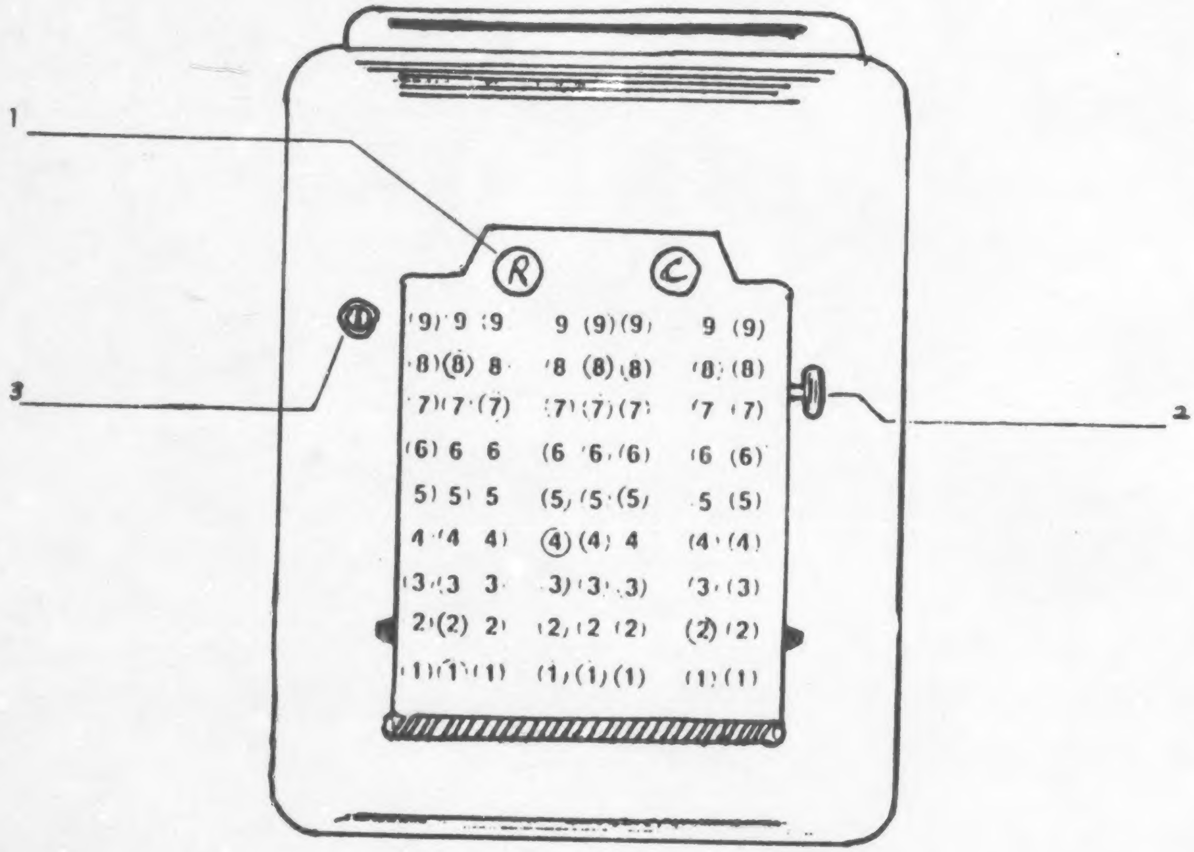
36. If, when verifying a traveler's check, you discover the signature is unacceptable, you should:

A. Call the police
B. Notify the proper bank official
C. Refer the customer to a notary
D. Ask for identification
E. None of these

37. When examining bond coupons for acceptability, which of the following does not apply.

A. All must show the same maturity date.
B. All must bear the name of the same issurer for each transaction.
C. All must be signed by the customer.
D. All must be presented on or after the date shown.
E. None of these

Using the illustration below, answer the following questions.



38. The above instrument is a

    A. Check processor
    B. Check voider
    C. Check writer
    D. Check reproducer

39. Key #1 is a

    A. Repeat key
    B. Printing lever
    C. Printing key
    D. Check slot
    E. None of these

40. Key #3 is a

A. Repeat key
B. Lock and key mechanism
C. Check slot
D. Tabulator
E. None of these

41. Key #2 is a

A. Repeat key
B. Check slot
C. Clear key
D. Print lever
E. None of these

42. How many copies of the Purchaser's Application Form must be prepared when processing traveler's checks?

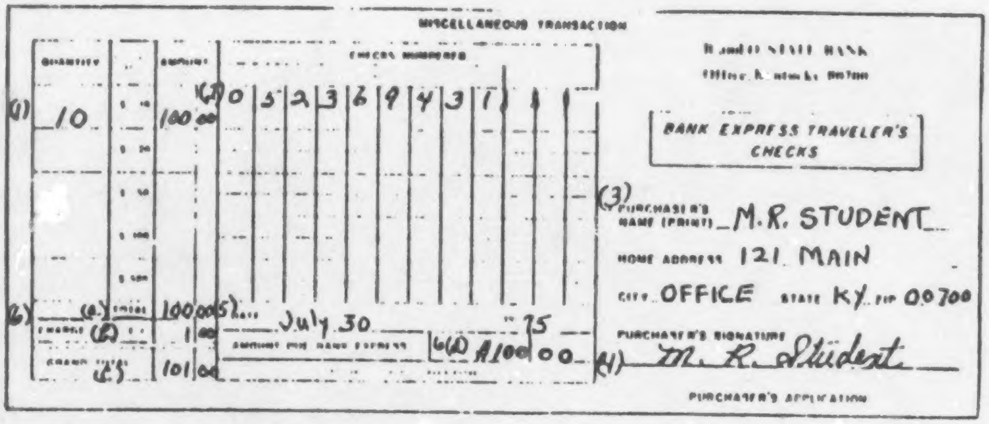
A. 1
B. 2
C. 3
D. 4
E. None of these

43. A copy of the Purchaser's Application Form is not:

A. Given to the issuing company
B. Given to the customer
C. Given to the Internal Revenue Service
D. Placed in the files
E. None of these

44. The following Purchaser Application Form has (an) error (s) at the following point (s):

A. 1 and 6a
B. 6c
C. 2 and 6d
D. 6b
E. None of these



MISCELLANEOUS TRANSACTION

QUANTITY
AMOUNT
CHECKS NUMBERED
(1) 10 100 00
(2) 0 5 2 3 6 9 4 3 1
(6) (a) TOTAL 100 00
CHARGE (b) 1 00
GRAND TOTAL (c) 101 00
(5) July 30 75
AMOUNT PAID BANK EXPRESS (6)(d) A100 00

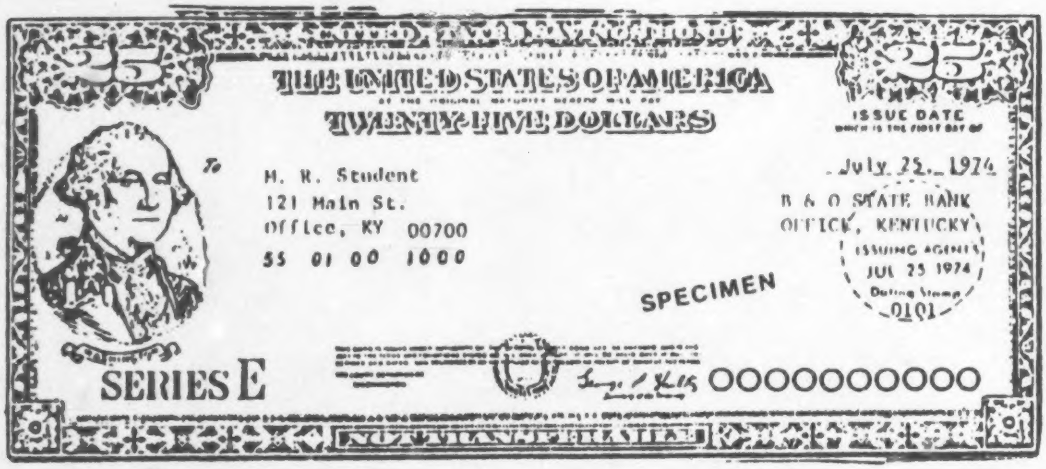
BANK EXPRESS TRAVELER'S CHECKS

(3) PURCHASER'S NAME (PRINT) M.R. STUDENT
HOME ADDRESS 121 MAIN
CITY OFFICE STATE KY ZIP 00700
PURCHASER'S SIGNATURE
(4) M. R. Student

PURCHASER'S APPLICATION

45. The savings bond below has been prepared for a customer. What information is not in the correct location?

A. Name and address
B. Social security number
C. Name of the issuing bank
D. Bond number
E. None of these



THE UNITED STATES OF AMERICA

TWENTY-FIVE DOLLARS

ISSUE DATE

To

H. R. Student
121 Main St.
Office, KY 00700
55 01 00 1000

July 25, 1974

B & O STATE BANK
OFFICE, KENTUCKY

ISSUING AGENTS
JUL 25 1974
Dating Stamp
0101

SPECIMEN

SERIES E

0000000000

46. When proving the total of the checks, you should:

A. Verify the amount with the head teller
B. Record the amount in the general ledger
C. List and total the amount on the adding machine and retain the ticket
D. All of these
E. None of these

47. In preparing a cashier's check, the teller must perform 6 steps. Four of the steps are given below. Which step is not correct?

A. Type the current date
B. Type the number amount next to the $ sign
C. Type the customer's name over the "authorized signature" line
D. Inscribe the written amount on the checkwriter
E. None of these

48. Which of the following statements is true regarding the procedure required in depositing bond coupons.

A. A Cash-In ticket is prepared because coupons are considered to be cash
B. The duplicate Cash-In and deposit slip are kept for the Proof Department
C. The original deposit slip is retained for balancing records
D. A Cash-Out receipt is sent to the issuing company
E. None of these

49. Which of the following is not found on a traveler's check?

A. The name of the issuing company
B. The date the check was issued
C. The check number
D. The signature of the issuing company official
E. None of these

50. When issuing certificates of deposit, copies of the certificate are not:

A. Furnished to the customer
B. Retained for the Proof Department
C. Retained for the general audit
D. Retained for the files of the bank
E. None of these

51. The certificate of deposit is completed in triplicate. A copy of the certificate does not go to:

A. The Proof Department
B. The customer
C. The Auditing Department
D. The bank files
E. None of these

52. Which of the following is not an option for the customer when he chooses the form of payment for his interest.

A. He may have the interest invested for him
B. He may have the interest mailed to his home
C. He may have the interest held for him
D. He may let the interest accumulate
E. None of these

53. In preparing certification forms for a certified check which of the following steps is not required?

A. Certification form number entered
B. Name of drawer supplied
C. Written number amounts supplied
D. Suplicate of this CF for customer's records
E. None of these

54. When preparing a bond for issue to a customer which of the following is prepared?

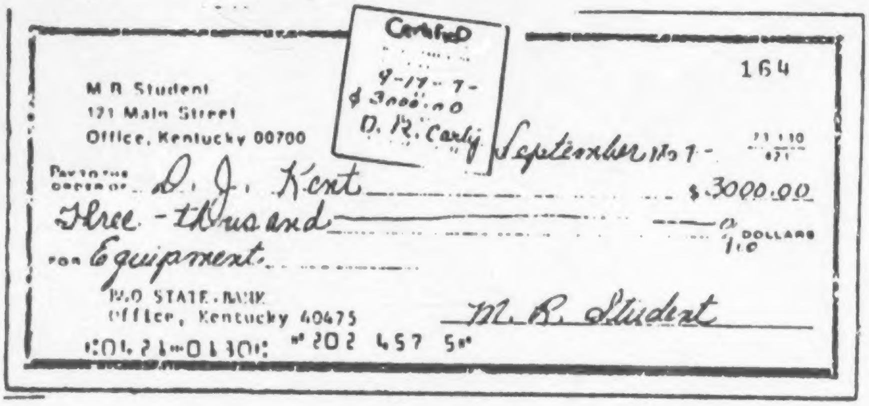
A. An original and specimen copy
B. An original and proof copy
C. An original and registration stub
D. An original and request for payment slip
E. None of these

55. When cashing a series E bond, which of the following procedures is incorrect?

A. Retain the duplicate copy of the Cash-Out ticket for the Proof Department
B. Retain duplicate copy of the Cash-Out ticket for Balance records
C. Enter the name of the bank on the face of the bond
D. Enter the teller number on the face of the bond
E. None of these

56. Assume that you have approved the check below for certification. Which of the following steps are required to process the check?

A. Stamp check with teller's stamp
B. Have customer complete certification form
C. Stamp check with certification stamp
D. Have customer complete deposit slip
E. None of these



Certified
9-17-7-
$3000.00
D. R. Carly

164

M R Student
121 Main Street
Office, Kentucky 00700

September 19 7-

Pay to the order of D. J. Kent $3000.00
Three-thousand 00/100 DOLLARS
For Equipment

PRO STATE BANK
Office, Kentucky 40475

M. R. Student

0421-0130 202 457 5

57. In the above certified check what step(s) are necessary to complete the processing of the check?

A. A hold must be placed against the customer's account for the amount of certification
B. The checkwriter must be used to inscribe over customer's amount on the check
C. Secure the signature of the proper bank official
D. Make sure the check is drawn on the home bank
E. None of these

58. Which of the following is not standard procedure used when accepting bonds for deposit.

A. Place the envelope containing coupons in the cash drawer until they can be picked up by the head teller
B. Prepare the deposit slip
C. Prepare the Cash-Out ticket, in duplicate, for the total amount of coupons
D. Stamp both copies of the deposit slip with the teller's stamp
E. None of these

59. Which of the following does not appear on the face of the bond envelope after the customer has been paid?

A. The name of the issuing company
B. The customer's name
C. Value of the coupons
D. The teller's stamp
E. None of these

60. How many copies of the memorandum receipt, including the original, are completed following the completion of the computer card?

A. 1
B. 2
C. 3
D. 4
E. None of these

Pre-Test: Secretary
Objectives S 38-43

Date____________________

Directions: For each of the following questions, circle the letter of the best answer.

1. The first step in preparing a statement of account for charge customers is:

   A. Record the date, explanation, and total of each invoice in the statement form.
   B. Separate the invoices by the customers' name.
   C. Record the total for all invoices in the bottom of the statement.
   D. Prepare the heading of the statement of account form for each individual customer.
   E. None of these

2. Which of the following is not a step in posting from invoices directly to the ledger?

   A. Recording the source
   B. Debiting or crediting the account
   C. Posting to a subsidiary ledger
   D. Indicating posting in the source document
   E. None of these

3. The first step in processing accounts payable invoices is to:

   A. Find the due date of the invoice.
   B. Verify goods or services received with the invoice.
   C. Record the invoice in the purchase journal.
   D. Have your supervisor co-sign the invoice.
   E. None of these

4. The account for Riverside Hardware is shown below. $122.50 was credited to the account on May 15, and $137.10 worth of nuts and bolts was purchased on May 25. What is wrong with this ledger?

   A. The May 1 credit balance is wrong.
   B. $137.10 is in the wrong column.
   C. $122.50 is in the wrong column.
   D. All of the above
   E. None of these

NAME Riverside Hardware

ADDRESS 3321 Park Lane, Tell City, Indiana 46906

DATE		ITEM	POST. REF.	DEBIT	CREDIT	CREDIT BALANCE
19-- May	1	Balance	✓			Ⓐ 375 00
	15				Ⓒ 122 50	
	25				Ⓑ 137 10	

5. The General Credit column is used when:

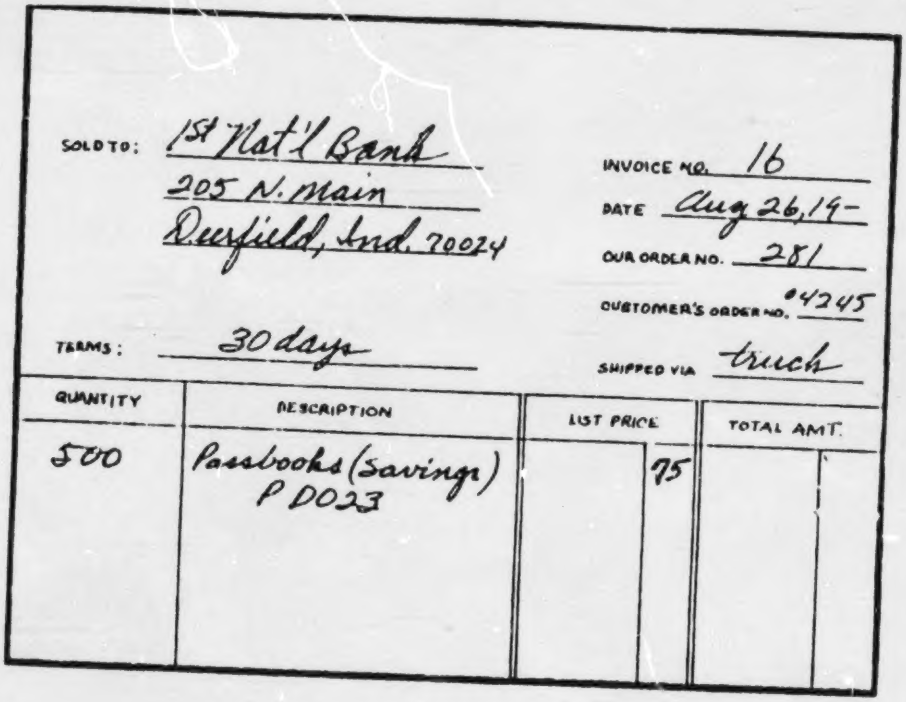
   A. you total all the previous headings
   B. you have an amount which is not recorded in a specific column
   C. you have a surplus
   D. the cash debit exceeds the cash in drawer
   E. None of these

6. In journalless bookkeeeping, transactions are posted:

   A. in a special journal
   B. directly to the account affected
   C. directly to the account, then to a special journal
   D. in a special journal, then to the account
   E. None of these

7. The 1st National Bank has ordered 500 Passbooks (Savings). The list price is $.75. You are preparing the invoice below. What numbers would appear in the Total Amount column?

   A. $75.00
   B. 500
   C. $3.75
   D. $500
   E. None of these



SOLD TO: 1st Nat'l Bank
205 N. Main
Deerfield, Ind. 70024

INVOICE NO. 16
DATE Aug 26, 19-
OUR ORDER NO. 281
CUSTOMER'S ORDER NO. #4245

TERMS: 30 days
SHIPPED VIA truck

QUANTITY	DESCRIPTION	LIST PRICE	TOTAL AMT.
500	Passbooks (Savings) P D023	75	

8. Using the following Cash Proof Form, determine what points are in error in the Cash Receipts Journal.

   A. 2 and 3
   B. 1 only
   C. 4 only
   D. 4 and 5
   E. None of these

CASH PROOF

Date *July 24, 1976*

Life Premiums Received	787.23
Home Premiums Received	521.76
Auto Premiums Received	819.61
Total Cash Received	2128.60
Cash in Drawer	2128.60

① CASH RECEIPTS JOURNAL

Date		Account Credited	Explanation	Post Ref.	Life Premiums Received Credit		Home Premiums Received Credit		Auto Premiums Received Credit		General Credit		Cash Debit	
Aug.	1	✓	7/24 Cash Proof ✓		787	23	521	76	819	61	✓		2128	60
		⑤	②				③				④			

9. An account statement is prepared toward the end of the month for __________.

   A. each type of merchandise purchased by a customer.
   B. delinquent accounts only
   C. each charge customer.
   D. each new account only.
   E. None of these

10. The Sales Journal is not used for which of the following?

   A. To record sales of merchandise on account.
   B. To record cash sales.
   C. As a post reference.
   D. Posting to ledger account.
   E. None of these

Below is an account from an Accounts Payable Ledger. Find the correct debit balance for this account.

NAME Cummings Inc.

ADDRESS 327 South St., Portland, Me. 04111

DATE		ITEM	POST. REF.	DEBIT	CREDIT	CREDIT BALANCE
19-- May	1	Balance	✓			227 40
	5				117 70	
	17			225 00		

11. The correct credit balance on May 17 is:

    A. $120. 10
    B. $117.70
    C. $345.10
    D. $109.70
    E. None of these

12. If you have an amount which is not recorded in a specific column, that amount will be placed in:

    A. the sales journal
    B. the cash debit column
    C. post reference column
    D. the general credit column
    E. None of these

13. Which of the following is not true of posting?

    A. Posting is necessary to determine how much money a business has at a given time.
    B. In the subsidiary ledger you keep a balance of how much each customer owes.
    C. Posting the transactions of a business takes place whenever sales exceeds a certain predetermined amount.
    D. Posting is not done every day.
    E. None of these

14. The last date in which a discount may be taken in an invoice dated May 6 and whose terms are 90 days is:

    A. August 6
    B. August 4
    C. August 3
    D. August 7
    E. None of these

15. Below is an account on Bill Day. Which entry is not correct?

A. debit balance of $30.00 on August 12
B. debit balance of $75.00 on August 14
C. debit of $75.00 on August 14
D. All of the above
E. None of these

NAME *Bill Day*

ADDRESS *104 Hickory Ave., Clar*

DATE		ITEMS	POST. REF.	DEBIT	CREDIT	DEBIT BALANCE
19- Aug.	1	Balance			20 00	
	1[illegible]	Mdse		50 00		30 00
	14	Mdse		75 00		75 00

GENERAL LEDGER

Cash

ACCOUNT NO. 11

#1

DATE		ITEMS	POST. REF.	DEBIT	CREDIT	BALANCE	
						DEBIT	CREDIT
19— Jan	1	balance ①	✓				
	5			② 50 00		2 000 00	
	18					2 050 00	③
					175 00	1 925 00	
						④	

Accounts Receivable

ACCOUNT NO. 113 ①

#2

DATE		ITEMS	POST. REF.	DEBIT	CREDIT	BALANCE	
						DEBIT	CREDIT
19-- Jan	1	Balance ⑤	✓			150 00	②
	1			150 00		③ 350 00	
	5				50 00	250 00	
						④	

Accounts Payable

ACCOUNT NO. 211

#3

DATE		ITEMS	POST. REF.	DEBIT	CREDIT	BALANCE	
						Debit	CREDIT
19-- Jan	1	Balance ①				③	2 000 00
	12				250 00		2 250 00
	18			175 00	④	②	2 425 00

Sales

ACCOUNT NO. 411

#4

DATE		ITEMS	POST. REF.	DEBIT	CREDIT	BALANCE	
						DEBIT	CREDIT
19-- Jan	1	Balance ①	✓				800 00
	1	④ ③	✓		② 150 00		950 00

Purchases

ACCOUNT NO. 511

#5

DATE		ITEMS	POST. REF.	DEBIT	CREDIT	BALANCE DEBIT	BALANCE CREDIT
19--							
Jan.	1	Balance ①	✓			175 00	
	12			250 00		② 425 00	
							③ 425 00

Name Green Supply Co.

Address Willmore, Nebraska 72042

#6

Date		Items	Post. Ref.	Debit	Credit	Credit Balance
19-- Jan.	12	Purchase Inv. # 976 ①	✓		250 00 ②	250 00 ③

Name Standard Production Co.

Address 1827 Quinton Dr., Newport, Tennessee 37057

#7

Date		Items	Post. Ref.	Debit	Credit	Credit Balance
19-- Jan.	1	Balance ④ ①	✓			875 00
	18	Check # 796		② 175 00		③ 700 00

January 1 -- Sold merchandise on account to Goodman's Inc., $150. Sales Invoice #177.

January 5 -- Received on account from Southland Department Store, $50. For Sales Invoice #155.

January 12 -- Purchased merchandise on account from Green Supply, $250. Purchase Invoice #976.

January 18 -- Paid on account $175 to Standard Production Company, Check #796.

Given the preceding information, check the following ledger entries for errors.

16. In #1, there are errors at point(s):

    A. 3 only
    B. 2 and 3
    C. 4 only
    D. 1 and 4
    E. None of these

17. In #2, there are errors at point(s):

    A. 1 and 2
    B. 3 only
    C. 4 only
    D. 2 only
    E. None of these

18. In #3, there are errors at point(s):

    A. 1 and 2
    B. 1 and 4
    C. 4 only
    D. 2 only
    E. None of these

19. In #4, there are errors at point(s):

    A. 1 only
    B. 2 and 4
    C. 1 and 3
    D. 3 only
    E. None of these

20. In #5, there are errors at point(s):

    A. 3 only
    B. 2 and 3
    C. 1 only
    D. 1, 2 and 3
    E. None of these

21. In #6, there are errors at point(s):

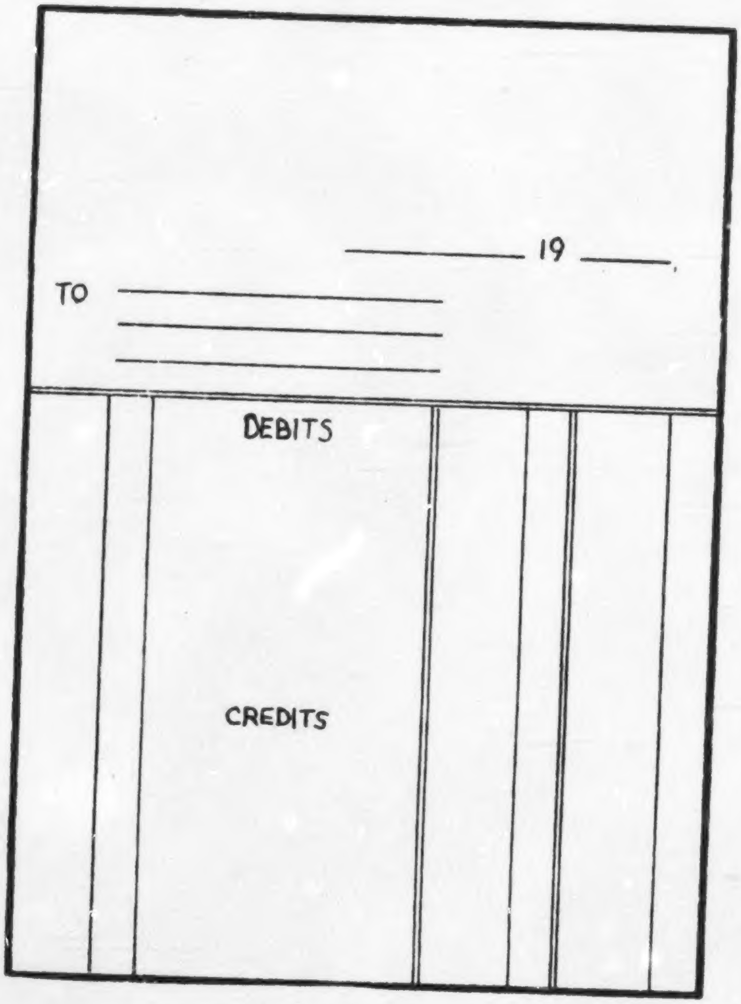
    A. 2 only
    B. 1 and 2
    C. 1 only
    D. 3 only
    E. None of these

22. In #7, there are errors at point(s):

    A. 4 only
    B. 1 and 3
    C. 3 only
    D. 2 only
    E. None of these

23. The blank form below is a:

    A. balance sheet.
    B. merchandise order form.
    C. supplemental ledger page.
    D. statement of account form.
    E. None of these



_______ 19 ____,

TO _______________

____

____

DEBITS

CREDITS

24. The correct extension and total for the following invoice is:

A. 365.80
B. 375.80
C. 365.70
D. 465.80
E. None of these

Quantity	Description	Unit Price		Extension	
25	Bookends	9	25		
9	Lamps L98	14	95		

25. The Post Reference Column of the Accounts Receivable Subsidiary Ledger shows:

A. the account number debited.
B. the source of information for the data.
C. the original date of the transaction.
D. that the transaction has been completed.
E. None of these

26. The type of business that would make best use of the journalless bookkeeping method would be:

A. a small business handling a large number of transactions.
B. a large business handling a small number of transactions.
C. a small business handling a small number of transactions.
D. large corporations, interdepartmentally.
E. None of these

27. In the process of posting from the Sales Journal and the Cash Receipts Journal which of the following steps is not included?

A. Recording the source
B. Posting to a subsidiary ledger
C. Complete the posting reference column
D. Cross reference the Sales Journal with Accounts Receivable
E. None of these

28. Given the following Cash Proof Form, what point(s) of the following Cash Receipt Journal is(are) incorrect?

A. 1 only
B. 1 and 6
C. 6 only
D. 5 and 6
E. None of these

Cash Proof

Date Aug. 3, 1976

Labor	272.00
Sales	
Parts	51.76
Total Cash Received	323.76
Cash in Drawer	323.76

① CASH RECEIPTS JOURNAL

Date		Account Credited	Explanation	Post Ref.	PARTS CREDIT		LABOR CREDIT		SALES CREDIT		General credit		Cash Debit	
1976 Aug	2		8/3 CASH PROOF		51	76	272	00			323	76	323	76
			②		③		④		⑤		⑥		⑦	

29. Which of the following appears on the standard Cash Proof Form:

A. The account number
B. The signature of the customer
C. Outstanding balance
D. The amount of cash in drawer
E. None of these

Below are two accounts from an Accounts Receivable Ledger. Find the correct debit balance for each account.

#1

NAME Barber Home Furnishing

ADDRESS 19 Hillside Dr., Kane, Tenn. 37427

DATE		ITEM	POST. REF.	DEBIT	CREDIT	DEBIT BALANCE
19— Jan.	6			250 00		
	12			75 00		
	18				310 00	

#2

NAME Newton Decorators

ADDRESS 1933 Barbor Rd., Kingsport, Tenn. 37457

DATE		ITEM	POST. REF.	DEBIT	CREDIT	DEBIT BALANCE
19— Jan.	2			125 70		
	3			12 50		
	13			375 50		
	12				125 75	

30. For account No. 1, the correct debit balance on January 18 is:

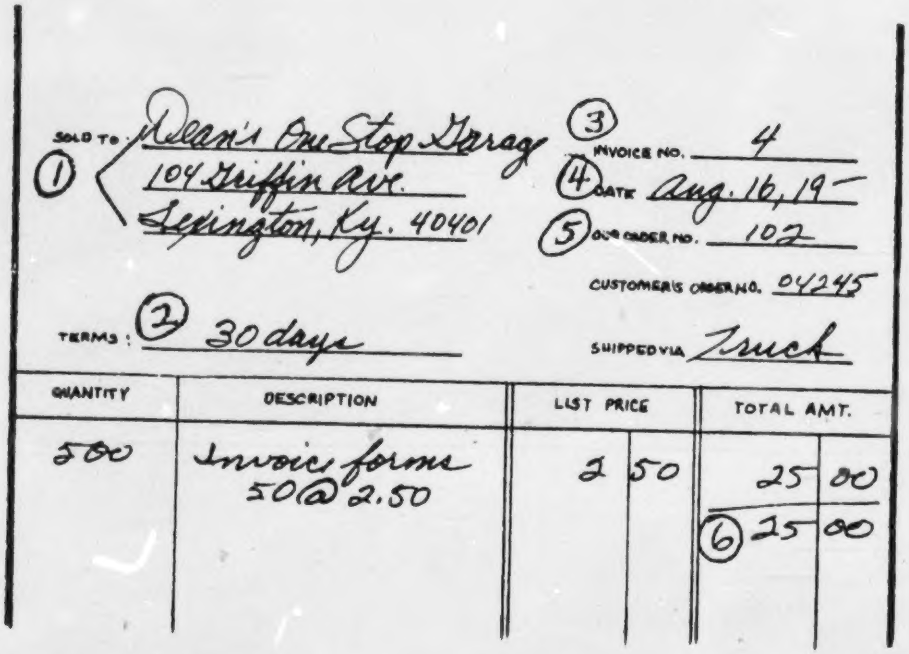
    A. $325.00
    B. $635.00
    C. $15.00
    D. $5.00
    E. None of these

31. For account No. 2, the correct debit balance on January 12 is:

    A. $387.85
    B. $513.70
    C. $125.75
    D. $1,061.30
    E. None of these

32. Which item(s) of information from the invoice shown below would not be posted to a purchase journal.

A. 5 only
B. 3 and 5
C. 1 and 4
D. 4 and 2
E. None of these



SOLD TO: ① Dean's One Stop Garag
104 Griffin Ave.
Lexington, Ky. 40401

③ INVOICE NO. 4
④ DATE Aug. 16, 19
⑤ OUR ORDER NO. 102
CUSTOMER'S ORDER NO. 04245

TERMS: ② 30 days
SHIPPED VIA Truck

QUANTITY	DESCRIPTION	LIST PRICE		TOTAL AMT.	
500	Invoice forms 50@2.50	2	50	25	00
				⑥ 25	00

33. If the column in the Sales Journal says "DR," you would post to the ______ column in the appropriate ledger.

A. credit
B. post ref
C. debit
D. debit balance
E. None of these

34. Below is an account statement for Dean's Garage. Which item(s) is in the incorrect location on this statement?

A. 1
B. 2
C. 3
D. All of the above
E. None of these

ROYAL DEPARTMENT STORE

Miami, FL 33131

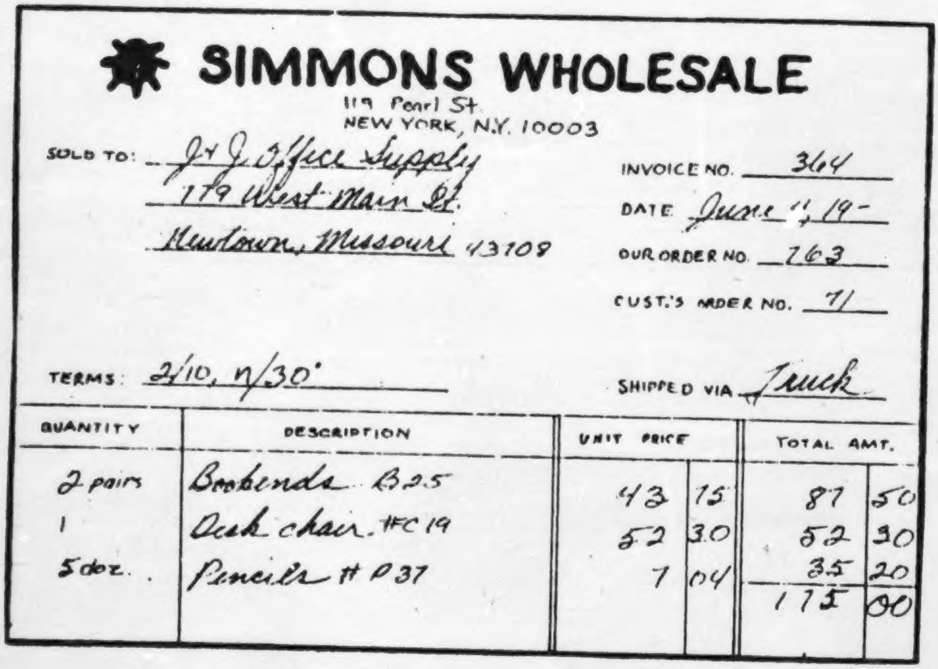
Aug 30 19--

TO: Dean's One Stop Garage
104 Griffin Ave
Lexington, Ky 40401

19--							
			DEBITS				
Aug	16	Mdse	① 25.00				
Aug	18	Mdse	10.00				
Aug	26	Mdse	40.00				
Aug	28	Mdse	60.00				
		TOTAL		②	135	00	
			CREDITS				
Aug	20	Cash	③ 30.00				
Aug	29	Return	40.00				
		TOTAL			70	00	
		BALANCE			65	00	

35. When posting the total of the Sales Journal to the Accounts Receivable and the Sales Ledger, you would not:

A. add the debit balance and credit balance.
B. add the credit balance and credit amount.
C. show your post reference in the ledger.
D. post the total to each ledger account.
E. None of these



SIMMONS WHOLESALE
119 Pearl St
NEW YORK, N.Y. 10003

SOLD TO: J & J Office Supply
179 West Main St.
Newtown, Missouri 43108

INVOICE NO. 364
DATE June 1, 19-
OUR ORDER NO. 763
CUST.'S ORDER NO. 71

TERMS: 2/10, n/30
SHIPPED VIA Truck

QUANTITY	DESCRIPTION	UNIT PRICE		TOTAL AMT.	
2 pairs	Bookends B25	43	75	87	50
1	Desk chair #C19	52	30	52	30
5 doz.	Pencils # P37	7	04	35	20
				175	00

36. Using the preceding invoice, determine which of the following checks is correctly filled out.

A. 1
B. 2
C. 3
D. 4
E. None of these

NO. 21
June 14 19
TO Simmons Wholesale
FOR Merchandise Inv #364

THIS CHECK IS IN FULL PAYMENT OF THE FOLLOWING INVOICES.

DATE		AMOUNT
June 14	Inv 364	175.00
	TOTAL	175.00
	LESS 2% DISCOUNT	3.50
	CHECK TOTAL	171.50

A.B. BANK NO. 21
June 14 19
PAY TO THE ORDER OF Simmons Whlsle $ 171.50
One hundred seventy one 50/100 DOLLARS
Student

#1

21
June 14 19
TO Simmons Wholesale
FOR Merchandise Inv # 364

THIS CHECK IS IN FULL PAYMENT OF THE FOLLOWING INVOICES:

DATE		AMOUNT
June 14	Inv 364	175.00
	TOTAL	175.00
	LESS 0% DISCOUNT	--0.00
	CHECK TOTAL	175.00

A.B. BANK NO. 21
June 14 19
PAY TO THE ORDER OF Simmons Whlsle $ 175.00
One hundred seventy five 00/100 DOLLARS
Student

#2

21
June 14 19
TO Simmons Wholesale
FOR Merchandise Inv # 763

THIS CHECK IS IN PAYMENT OF THE FOLLOWING INVOICES:

DATE		AMOUNT
June 14	Inv 763	175.00
	TOTAL	175.00
	LESS 3% DISCOUNT	3.50
	CHECK TOTAL	171.50

A.B. BANK NO. 21
June 14 19
PAY TO THE ORDER OF Simmons Whlsle $ 171.50
[illegible] 50/100 DOLLARS
Student

#3

21
June 14 19
TO Simmons Wholesale
FOR Merchandise Inv 364

THIS CHECK IS IN PAYMENT OF THE FOLLOWING INVOICES

DATE		AMOUNT
June 14	Inv 364	175.00
	TOTAL	175.00
	LESS 2% DISCOUNT	3.00
	CHECK TOTAL	172.00

A.B. BANK NO. 21
June 14 19
PAY TO THE ORDER OF Simmons Whlsle $ 172.00
One hundred seventy two 00/100 DOLLARS
Student

#4

37. The first step in transferring information from the cash proof form is:

   A. Record the date
   B. Attach a duplicate cash proof form to the Cash Receipt Journal
   C. Write in the heading taken from the cash proof form
   D. Record the serial number of the cash proof form
   E. None of these

38. In the example on the following page from a Cash Receipts Journal which of the following should be entered in the "Totals" Line of the Cash Debit column?

   A. 1,050
   B. 1,075
   C. 1,105
   D. 975
   E. None of these

39. Using the information from the Cash Receipts Journal, which item(s) have been incorrectly posted to the account of John Albertson?

   A. 1 and 3
   B. 2 and 3
   C. 1 and 2
   D. 1 only
   E. None of these

ACCOUNTS RECEIVABLE LEDGER

NAME John Albertson
ADDRESS 1829 North Central, Clearview, WI 47047 TERMS:

DATE		ITEM	POST REF.	DEBIT	CREDIT	DEBIT BALANCE
19--						
Jan.	6			① 125 00		
	10				② 60 00	③ 65 00

CASH RECEIPTS JOURNAL

PAGE 9

DATE		ACCOUNT TITLE	DOC. NO.	POST REF.	GENERAL		SALES CREDIT	ACCOUNTS RECEIVABLE CREDIT	SALES DISCOUNT DEBIT	CASH DEBIT
					DEBIT	CREDIT				
19-- Sept.	1	Balance on hand $5,400.00		✓						
	3	B. J. Martin	R125					25 00		
	3	Bob Cratz	R126					20 00		
	6	John Albertson	R127					125 00		
	6	William Johns	R128					150 00		
	10	John Albertson	R129					60 00		
	14	Jane Roberts	R130					60 00		
	19	Donald New	R131					35 00		
	26	✓	T4	✓			400 00			
	28	Ralph Craig	R132					75 00		
	31	Ruth Johnson	R133					125 00		
	31	Totals					400 00	675 00		

PRE-TEST: OBJECTIVES
PRE-TEST: OBJECTIVES TM 34-40

Date________________________

Directions: For each of the following questions, circle the letter of the best answer.

PRE-TEST

1. What is the best method for checking a cooling system for leaks?

   A. Hygrometer
   B. Visual inspection
   C. Hydrometer
   D. Pressure gauge
   E. None of these

2. What part of the cooling system could be referred to as the "heart" of the cooling system?

   A. Thermostat
   B. Radiator
   C. Water pump
   D. Pressure cap
   E. None of these

3. The primary purpose of a thermostat is:

   A. Control engine temperature
   B. Control engine coolant flow
   C. Control engine cooling system pressure
   D. Control engine hydrometer level
   E. None of these

4. What will be the result of tightening a V-belt too much?

   A. Water circulates too fast
   B. Belt life is extended, if kept lubricated
   C. Bearing wear
   D. Thermostat wear
   E. None of these

5. Which of the following is the major cause of deposits in a cooling system?

   A. Soft water
   B. Hard water
   C. Antifreeze
   D. Defective thermostat
   E. None of these

6. Most radiator hoses rot because of:

   A. Grease and oil
   B. Heat and water
   C. Air and heat
   D. Water and air
   E. None of these

7. The coolant level should be ______ inches below the neck of a tractor radiator tank.

   A. 1/2 - 2
   B. 1/2 - 3
   C. 1 - 4
   D. 2 - 3
   E. None of these

8. What is the most common type of water pump?

   A. Potential force
   B. Cast blade
   C. Alumite
   D. Centrifugal
   E. None of these

9. Pressured cooling systems permit engines to:

   A. Boil coolant
   B. Evaporate coolant
   C. Discharge coolant
   D. Displace pressure rapidly
   E. None of these

10. Which of the following instruments is used to test the freezing protection of engine coolant?

    A. Hygrometer
    B. Tempemeter
    C. Hydrometer
    D. Pressure gauge
    E. None of these

11. Where should a V-belt ride on a pulley?

    A. Top of grove
    B. Lip of grove
    C. Side of grove
    D. Bottom of grove
    E. None of these

12. What is the final step in installing a new radiator hose?

    A. Apply sealing compound
    B. Refill radiator with coolant
    C. Clean the connections
    D. Pressure test the system
    E. None of these

13. An engine will run too cold, and inefficiently if:

    A. Pressure leaks within the cooling system.
    B. Thermostat opens too slowly.
    C. Thermostat opens too quickly.
    D. Deposits are not removed from the cooling system.
    E. None of these

14. When a cooling system contains rust and scale, it must be cleaned with a(n) _____ cleaner unless specified differently in the service manual.
    - A. Acid base
    - B. Alkaline base
    - C. Actie base
    - D. Hypocarbon base
    - E. None of these

15. Plain water is:
    - A. A satisfactory coolant in warm weather.
    - B. A satisfactory coolant in cold weather.
    - C. Not a satisfactory coolant in warm weather.
    - D. Not used with antifreeze
    - E. None of these

16. Which of the following is not a way radiator hoses show damage?
    - A. Softening
    - B. Hardening
    - C. Cracking
    - D. Swelling
    - E. None of these

17. In what ways are most modern water pumps lubricated?
    - A. Multigrade lubricants
    - B. Graphite compounds
    - C. Self lubricated
    - D. Grease compounds
    - E. None of these

18. Fluctuations of a pressure gauge, while the engine is operating, indicates:
    - A. A closed thermostat
    - B. A defective hydrometer
    - C. Radiator cap leakage
    - D. Head gasket leakage
    - E. None of these

19. What is the last step of cleaning the cooling system?
    - A. Filling cooling system with proper solutions.
    - B. Clean foreign material from outside radiator.
    - C. Pressure test cooling system.
    - D. Backflushing the cooling system.
    - E. None of these

20. Permanent type antifreeze should be changed when?
    - A. Every 2 years
    - B. Each year
    - C. Never, if permanent type antifreeze
    - D. Every 36 months
    - E. None of these

21. When visually inspecting the radiator, the tubes should be checked for:

    A. Fractured seams
    B. Rust
    C. Damaged gaskets
    D. Worn filler pipes
    E. None of these

22. When using a higher temperature thermostat, which of the following coolants should not be used?

    A. Hydranol antifreeze
    B. Alkezonaol antifreeze
    C. Methanol antifreeze
    D. Permanent antifreeze
    E. None of these

23. Why should a V-belt not be lubricated with oil or grease?

    A. It will soften the rubber.
    B. It will cause the belt to slip.
    C. It will cause the belt to stretch.
    D. It will cause the belt to overheat.
    E. None of these

24. The best type of sealing compounds for use when installing radiator hoses is:

    A. Non-softening
    B. Non-hardening
    C. Non-aspernic
    D. Do not use sealing compounds on hoses
    E. None of these

25. Why must the thermostat be removed when flushing the cooling system?

    A. To prevent damage to thermostat caused by cleaner.
    B. To permit inspection of water jacket and thermostat.
    C. To allow clean water to flow through all of cooling system.
    D. The thermostat does not need to be removed.
    E. None of these

26. Radiator hoses should be examined at least:

    A. Twice a month
    B. Twice a year
    C. Once a year
    D. Every 36,000 engine hours
    E. None of these

27. Why should antifreeze never be mixed (alcohol & ethylene glycol)?

    A. The coolant evaporates more readily.
    B. The freezing protection reading will not be accurate.
    C. The cooling system will rust more easily.
    D. You might crack the head or cylinder block.
    E. None of these

28. After installation of a new V-belt, when should the tension be rechecked?

    A. After 1 day of use
    B. After 1 week of use
    C. After 1 hour of use
    D. After 1 month of use
    E. None of these

29. When replacing the thermostat, the _____ faces toward the engine.

    A. Mouth plate
    B. Lip ring
    C. Water seal
    D. Expansion element
    E. None of these

30. Which of the following is never driven by the fan belt?

    A. Generator
    B. Alternator
    C. Water pump
    D. Radiator cooling fan
    E. None of these

31. Which of the following is a type of thermostat?

    A. Pellet type
    B. Crescent type
    C. Biforge type
    D. Pressure type
    E. None of these

32. When cleaning extremely dirty systems, what additional steps must be taken to ensure a clean cooling system?

    A. Clean foreign material from outside radiator.
    B. Backflushing the cooling system.
    C. Removal of water pump.
    D. Use of Alken pressure gun.
    E. None of these

33. What happens when a water pump fails?

    A. The radiator will overflow.
    B. The engine will stall.
    C. The thermostat will open.
    D. Water pressure will build up in the engine.
    E. None of these

34. Which of the following gauges are necessary to properly test a thermostat?

    A. .008 feeler gauge
    B. .006 feeler gauge
    C. .003 feeler gauge
    D. .001 feeler gauge
    E. None of these

APPENDIX E

Performance Skill Test

TM - 35
Trad.

Instructor's Final Checklist

PRESSURE TESTING THE COOLING SYSTEM

Check the student's performance in the following elements of pressure testing the cooling system.

Place an X in the appropriate box indicating not accomplished, partially accomplished, or fully accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the "Not Applicable" box.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
1. When pressure testing the radiator cap, the student:				
a. Carefully removed the radiator cap.	[ ]	[ ]	[ ]	[ ]
b. Correctly installed the cap on the tester	[ ]	[ ]	[ ]	[ ]
c. Obtained and recorded the correct reading	[ ]	[ ]	[ ]	[ ]
d. Obtained a test reading within one gradation of the instructor's.	[ ]	[ ]	[ ]	[ ]
e. Determined if the cap was usable.	[ ]	[ ]	[ ]	[ ]
2. When pressure testing the rest of the cooling system, the student:				
a. Installed the tester correctly.	[ ]	[ ]	[ ]	[ ]
b. Corrected or marked all leaks	[ ]	[ ]	[ ]	[ ]]
c. Operated the engine and observed the tester gauge for fluctuations.	[ ]	[ ]	[ ]	[ ]
d. Removed the tester and reinstalled the radiator cap	[ ]	[ ]	[ ]	[ ]
e. Cleaned and stored tools and equipment.	[ ]	[ ]	[ ]	[ ]

APPENDIX F

Classroom Summary Report

Western K[illegible]ucky University
Competenc[illegible]ased Vocational Education
Classroom Summary Report

Teacher:
School:
Subject:
Objective:

Student Name	Date		Total Class Periods	Effort Rating (L)1 2 3 4 5(H)	Attitude Rating (P)1 2 3 4 5(E)	Letter Grade for Objective	Number of Trials	Class Periods Absent
	Begin	Complete						